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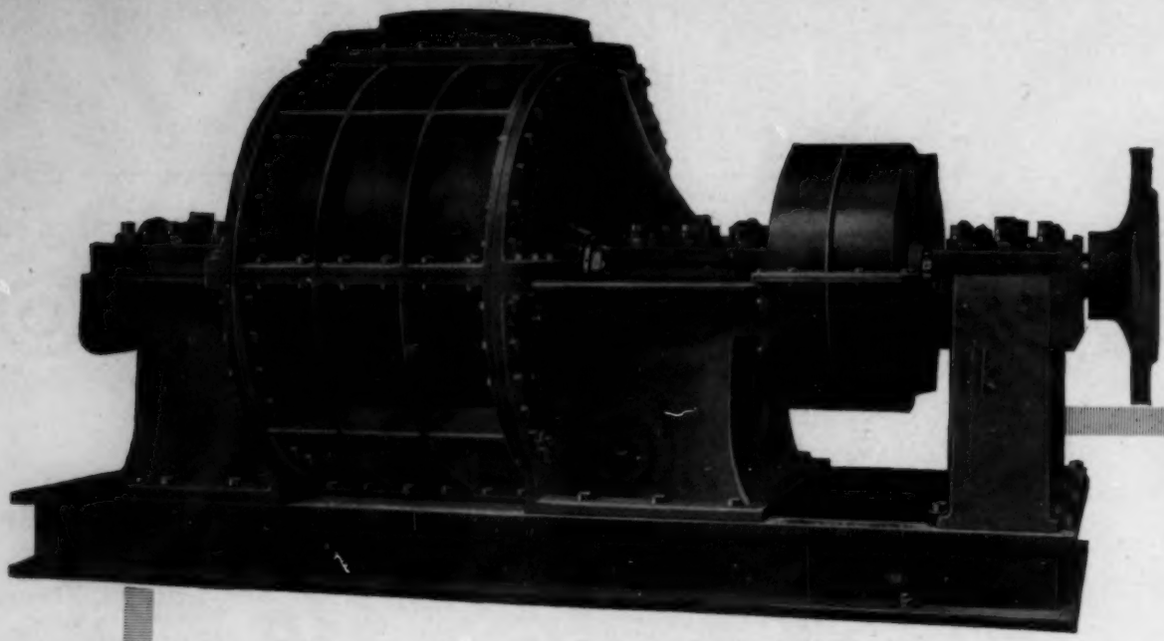

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CONNERSVILLE, IND.

NEW YORK
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THE IRON TRADE REVIEW

Vol. LXIII Cleveland, November 14, 1918 *No. 20*

Moving Swiftly From War to Peace

Industry, Impatient to Restore Normal Conditions, Calls for End of Battle Line Production—Priority Regulations Modified to Release New Enterprise—Building Ban Lifted—Steel Makers Confer at Capital

WITH the war over, American industry is impatient for the triumphs of the new peace.

A swelling chorus is being raised to Washington to hasten the process of readjustment and to cut loose the contracts for virtually useless war production which continue to tie up so much valuable material and plant capacity. Many manufacturers, convinced that sound prosperity thereby will be restored the more quickly, aim to get on a peace basis at the earliest possible time. Calmer study of the armistice terms to Germany which effectively strip that nation of war power, has stimulated this movement.

Priority Rule Modified

Washington apparently is harkening to this state of opinion. A quick readjustment of priority regulations has been made which retains ship and railroad demands at the top of the list, but subordinates munitions requirements. At the same time 50 per cent of the restrictions on the supply of steel for industrial use, has been lifted, and various public and private enterprises have been freed of curtailment. Much of the ban on construction work has been removed. While under the creating laws many of the present forms of governmental control of industry may last for many months, it is quite probable that this regulation gradually will be revised as developments require in order to enlarge the free play of supply and demand. The situation is moving so rapidly that it is difficult to forecast even the immediate future. It is understood the war industries board still is debating what form of regulation shall be maintained. The proposal to establish minimum prices has been regarded as impracticable.

Representative iron and steel producers at the call of the steel director are in conference in Washington to discuss peace problems of the iron and steel industry. This is the first industry to be called into consultation by the government on the new conditions which the end of the war have raised. Price changes it is understood are not to be considered at this conference.

Calmness in Market

Composure rules in the iron and steel industry. The attitude among both producers and consumers is one of waiting. Prices are steady except in scrap which has been showing irregularity for several weeks. There have been various cancellations which, however, have not been heavy and these with some holding back of orders have permitted more steel to be shunted into lines of output sorely curtailed under war demands. Wire products are a case in point and considerable selling is being done. The French government has begun the purchase of 150,000 to 200,000 tons of soft steel bars for rebuilding work to be delivered over the first quarter.

Adjustment of the great war program to peace conditions is proceeding with considerable speed. The secretary of war has announced that projects authorized by his department but not started will be abandoned, and curtailment of work under way will be taken up at a conference between the war and the labor departments. The labor problem is recognized as one of the most difficult to be handled in connection with the reconstruction period. Several million dollars worth of machinery for the proposed gun plant at Neville Island has been cancelled.

Demobilize by Industry

The reported plan to demobilize the American army by industries instead of by military units follows the method worked out by the British. In that country shipbuilders and steel workers will receive the first call. Price and priority control of industry in Great Britain is to be continued temporarily.

Reflection of October's high speed production is to be found in the steel ingot statistics for that month. The output was the greatest of any month on record and was at the annual rate of about 45,500,000 tons.

NOVEMBER 14, 1918

THE IRON TRADE REVIEW

A weekly publication devoted to the Iron, Steel, Foundry and Metal-working Industries

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Clear the Decks of War Litter

ONE of the best known men in the iron and steel industry vigorously expresses these sentiments relative to the present unique business situation which has been created by the ending of the war:

Important iron and steel manufacturers are looking forward without complaint not only to the possibility but to the absolute necessity of cancelling as quickly as possible every order for war material not needed for the maintenance of our army and navy on what is practically a peace basis.

It is a serious crime to continue unnecessarily the expenditure of money, labor and material for war purposes when it is all so seriously needed for peace and reconstruction work in America. The makers of agricultural implements, stoves and railroad work cannot get iron or steel and the hour has come right now to stop further wastage and settle with contractors who have material of this kind for delivery next year.

This is a clean-cut message of good sense and sound thinking. It points to the biggest question of the hour which rapid events, almost over night, have laid before the country. Common necessity has thrust upon the industrial system of the nation, an abnormal burden glorified by its service in war, but made hideous by its utter uselessness in peace. The time has come for a swift, major operation.

The war is over. With the whole world impoverished in materials and manpower, it is a crime against humanity to continue the wanton waste of war production one day longer than circumstances imperatively demand. Let us have all the ships, all the railroad equipment and supplies and all the other products of our yards, shops and mills, which, while needed to war and peace alike, yet are the instruments of civilization. But let us make an immediate end to the manufacture of great numbers of guns, of eagle boats, of special craft, of mines, of nets, etc., designed for protection against hostile submarines or warships which no longer roam the seas; of cannon, of tanks, of projectiles, of shrapnel, of grenades, of small arms, and of other weapons of offense or defense against a powerful foe who has ceased to exist. All these things so imperatively needed yesterday to save the world, now must be banished to sustain it. Far better for this country to stop their production now in varying stages of completion than later to send them, finished, to the scrap heap which it must, as the litter of uselessness in a new age.

War work has ceased to be a necessity. It is now a commercial barnacle. The sooner industry is completely purged of it, the sooner will industry claim for itself that period of prosperity which forward-looking men see just over the horizon. If Washington wishes to perform a really constructive service for American business, in recognition of the latter's wholesouled support during the critical months now past, it must wipe out all contracts for strictly war material without an unnecessary day adding to this fearful and barren use of money, material and labor. If it does not do this on its own accord, it may soon have to deal with the demands from industry itself that it be freed of this purposeless and now destructive duty.

No Time for Partisan Politics

RECONSTRUCTION of the economic life of the nation is the great outstanding question that must be dealt with by congress. It must be taken up at once by the party now in control and continued by the one coming into power after March 4, 1919. The democratic party will have to take the lead in view of its present majority and then transfer it to the republican party on the date named. By reason of the upturn in the political complexion of congress following the recent elections, the democrats probably will be slow to attempt to force through legislation dealing with reconstruction along purely partisan lines. To do so easily might mean that the republicans would retaliate when they come into control, and in the meantime resort to parliamentary methods to hold up legislation that may be sought by the party now in power. At the same time, the republicans, while coming into control of the sixty-fifth con-

gress, will be kept aware of the fact that a democrat is the occupant of the White House, who, because they will not have a two-thirds majority in congress, can veto and kill any legislation they may pass. So that while the election returns apparently will force the ruling party to assume a attitude of compromise, it also is true that the same situation may be applicable to the next congress because of the vast constitutional power resting in the hands of the President. Also the division of the senate along political lines will be so close that the few well known "free lances" in that branch will be in a peculiarly strong strategic position and in point of fact might be the deciding power in passing on legislation by throwing their support from one side to the other.

For the business world, this coalition may be looked forward to with gratification. It will compel one party to give fair consideration to the arguments of the other. This should mean a closer co-operation and better statesmanship. It ought to mean the abandonment of partisan politics with relation to the vast problems of reconstruction and assure more expedition in solving them.

This is no time for any quibbling over narrow political issues. The country, and the world, for that matter, has gone through an unprecedented travail of tragedy during which devastation of life and property has been wrought upon such a scale that the mind is staggered in any attempt to comprehend it. Peace after four years of the horrors of war is at hand. Peace in politics to assure a return to the blessings that are so well deserved must also follow and those in authority of the government, in both the legislative and executive branches, will hear from the business and the general public in no uncertain terms unless they lend their efforts in this direction.

War's Restrictions May Continue

CESSATION of hostilities does not necessarily mean the cessation of war-time price fixing or any other federal control imposed to bring about industrial mobilization for war. President Wilson has the authority now to abolish any industrial restriction that he choses, just as he had the authority delegated him by congress to impose it in the first place. But this does not mean that the authority given him will pass with the signing of an armistice, the cessation of hostilities or the actual end of the war.

The various war measures enacted by congress carried the stipulation that the authority delegated thereunder shall terminate with the end of the war or within a definite period thereafter. All of these acts contained a most important qualifying clause. The end of the war, the laws say, shall be determined and proclaimed by the President. Therefore, before the war is legally over, the President must issue an official proclamation from the White House. From the date of that proclamation American industries may begin to measure the time when they can expect to be relieved of all potential subservience to the legal restrictions which the war has inspired in the United States.

Emergency shipbuilding; the control of railroads; food restrictions; the conservation orders; priorities, and other measures imposed by the war industries board, and the power of the army and navy to confiscate property for war purposes, all are powers delegated under the various war acts. The authority to apply these laws will not cease or even begin to cease until the official proclamation from the White House has been issued stating to the world that peace has been restored.

The signing of the armistice in Europe is merely the beginning. Peace is still many weeks off. It cannot be had until all international political questions have been decided, the terms seeking to maintain peace, indemnities, and concomitant matters have been agreed upon and signed by the delegated representatives of all the belligerent governments. Negotiations over these peace terms will, of a necessity, require considerable time.

Conclusion of the peace negotiations promises to be much longer delayed because of the political unrest in the territory once controlled by the central powers. Before the allies can sign the peace terms properly constituted governments must be established by their erstwhile enemies so that the terms may be binding upon the very people who have been supporting the deposed war lords. Unless ample time is given the various peoples constituting old Germany and Austria-Hungary to reorganize themselves into a government of reasonable permanency, it would be useless to attempt to sign peace terms of any form.

Peace, therefore, will not come immediately although the war from all practical standpoints is definitely over now. In the meantime the war restrictions placed upon American industries are just as legal as the day on which they were first invoked. The war trade board, which imposes restrictions upon imports and exports, the food and fuel administrations will relinquish their authority the day following the peace proclamation. The war industries board, with its many powerful authorities to mobilize industries, will not be compelled to yield up its powers until the expiration of six months after the peace proclamation. The railroad administration will continue for 21 months thereafter, and the Emergency Fleet corporation has its legal life extended for five years. In the meantime, however, congress may change any of this should it so elect. War's grip upon American industries may, therefore, be prolonged for a considerable period after the day upon which all hostilities ceased.

Iron and Steel Prices

Corrected to Wednesday Noon

SCRAP, WAREHOUSE AND IRON ORE PRICES ON PAGE 1156

PIG IRON

Bessemer, valley	$35.20
Bessemer, valley, del. Pittsburgh	36.60
Basic, valley	33.00
Basic, valley del., Pittsburgh	34.40
Basic, delivered eastern Pa.	36.90
Basic, Buffalo, furnace	33.00
Malleable, valley, del. Pittsburgh	35.90
Malleable, Chicago, furnace	34.50
Malleable, Buffalo, furnace	34.50

GOVERNMENT SCHEDULE

1.75 to 2.25 silicon (No. 2 foundry, No. 2 plain, and No. 3 southern), $34 furnace is base.

2.25 to 2.75 silicon (No. 2X, No. 1 Northern foundry, and No. 2 southern), base plus $1.25 or $35.25 furnace.

2.75 to 3.25 silicon (No. IX) base, plus $3.00 or $37 furnace. 3.25 to 3.75 silicon base, plus $5 or $39 furnace.

3.75 to 4.25 silicon, $40.00, plus $1 for each ¼ per cent of silicon up to per cent.

No. 1X, delivered Philadelphia	40.90
No. 2, valley del., Pittsburgh	35.40
No. 2 foundry, Cleveland furnace	34.00
No. 2 foundry, Ironton furnace	34.00
No. 1 foundry, Chicago furnace	35.25
No. 2 foundry, Chicago furnace	34.00
No. 2X, eastern del., Phila.	39.15
No. 2X, eastern, N. J. tidewater	39.55
No. 2X foundry, Buffalo furnace	35.25
No. 2 plain, del. Philadelphia	37.90
No. 2 plain, N. J. tidewater	38.30
No. 2 southern, Birmingham	35.25
No. 2 southern, Cincinnati	38.85
No. 2 southern, Chicago	40.25
No. 2 southern, Phila.	41.75
No. 2 southern, Cleveland	40.25
No. 2 southern, Boston	43.25
No. 2 southern, St. Louis	39.50
Virginia, No. 2X, furnace	37.50 to 38.50
Virginia, No. 2X, Phila.	41.85
Virginia, No. 2X, Jersey City	42.15
Virginia, No. 2X, Boston	43.25
Gray Forge, valley, del. Pittsburgh	34.40
Silveries, 8%, furnace	47.50
Ohio Silveries, 8%, Chicago	51.30
Tennessee Silveries, 8%, Chicago	52.50
Low phos, standard, Phila.	57.00
Low phos, Lebanon, furnace	51.00 to 53.00
Low phos, standard, Pittsburgh	54.40
Charcoal, Superior, Chicago	38.70 to 39.00
Charcoal, Superior, Buffalo	38.50
Charcoal, southern to 2 per cent silicon, furnace	51.00

COKE

(At the ovens)

Connellsville furnace	$6.00
Connellsville foundry	7.00
Pocahontas furnace	8.00
Pocahontas foundry	8.00
New River foundry	8.00
New River furnace	8.00
Wise county furnace	7.25
Wise county foundry	8.25

FERROALLOYS

Ferromanganese, 70 per cent delivered	250.00
Spiegel, 16 per cent fur., spot	75.00
Spiegel, contracts, furnace	75.00
Ferrocarbon, titanium, carloads, maker's plant	200.00
Ferrosilicon, 50 per cent, spot and contract, delivered	150.00 to 160.00
Bessemer ferrosilicon, 10 per cent	57.00
Bessemer ferrosilicon, 11 per cent	60.30
Bessemer ferrosilicon, 12 per cent	63.60

Ferrosilicon prices at Ashland, Ky., Jackson and New Straitsville, O.

SEMIFINISHED MATERIAL

BILLETS AND BLOOMS

Open-hearth, Pittsburgh	$47.50
Open-hearth, Philadelphia	51.50
Open-hearth, Youngstown	47.50
Bessemer, Pittsburgh	47.50
Bessemer, Youngstown	47.50
Forging, Pittsburgh	60.00
Forging, Philadelphia	64.00

SHEET BARS

Open-hearth, Pittsburgh	$51.00
Open-hearth, Youngstown	51.00
Bessemer, Pittsburgh	51.00
Bessemer, Youngstown	51.00

SLABS

Pittsburgh and Youngstown	$50.00

WIRE RODS AND SKELP

Wire rods, Pittsburgh	$57.50
Grooved skelp, Pittsburgh	2.90c
Sheared skelp, Pittsburgh	3.25c

SHAPES, PLATES AND BARS

(In cents per pound)

Structural shapes, Pitts.	3.00c
Structural shapes, Phila.	3.245c
Structural shapes, N. Y.	3.27c
Structural shapes, Chgo.	3.37c
Tank plates, Chicago	3.52c
Tank plates, Pittsburgh	3.25c
Tank plates, Philadelphia	3.495c
Tank plates, New York	3.52c
Bars, soft steel, Pittsburgh	2.90c
Bars, soft steel, Chicago	3.17c
Bars, soft steel, New York	3.17c
Bars, soft steel, Phila.	3.145c
Bar iron, common, Phila.	3.745c
Bar iron, common, Chicago	3.50c
Bar iron, refined, Chicago	5.00c
Bar iron, common, Cleveland	3.67c
Bar iron, common, New York	3.77c
Bar iron, common, Pittsburgh	3.50c
Bar iron, refined, Pittsburgh	5.00c
Hard steel bars, Chicago	3.00c

RAILS, TRACK MATERIAL

Angle bars, Pittsburgh base	3.25c
Angle bars, Chicago base	3.25c
Standard bessemer rails, mill	$55.00
Stand. open-hearth rails, mill	57.00
Light rails, 25 to 45, mill	3.00c
Relaying rails, light, St. L.	60.00 to 67.00
Spikes, railroad, Pitts.	3.90c
Track bolts, Pittsburgh	4.90c
Track bolts, Chicago	5.115c
Tie plates, Chicago	3.25c

WIRE PRODUCTS

(Per 100 lbs. to jobbers; retailers 5c more)

Wire nails, Pittsburgh	$3.50
Coated nails, Pittsburgh	3.45
Plain wire, Pittsburgh	3.25
Galvanized wire, Pittsburgh	3.95
Polished staples, Pittsburgh	3.65
Galvanized staples, Pittsburgh	4.35
Barb wire, painted, Pitts.	3.65
Barb wire, galvanized, Pitts.	4.35
Cut nails, Pittsburgh	5.00

CHAIN, PILING, STRIP STEEL

(In cents per pound)

Chain, 1 in. proof coil, Pitts.	7.50c
Sheet piling, base, Pitts.	4.00c to 5.00c

Cold rolled strip steel, hard coils, 1⅛ inches and wider by 0.100 inch and heavier, base per 100 pounds, 6.50c.

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SHEETS

(In cents per pound)

SHEET MILL BLACK

No. 28, open-hearth, Pitts.	5.00c
No. 28, bessemer, Pitts.	5.00c
No. 28, open-hearth, Chi.	5.27c

TIN MILL BLACK

No. 28, open-hearth, Pitts.	5.00c
No. 28, bessemer, Pitts.	5.00c

GALVANIZED

No. 28, open-hearth, Pitts.	6.25c
No. 28, bessemer, Pitts.	6.25c
No. 28, open-hearth, Chi.	6.52c

BLUE ANNEALED

No. 10, open-hearth, Pitts.	4.25c
No. 10, bessemer, Pitts.	4.25c
No. 10, open-hearth, Chi.	4.52c
No. 19, open-hearth, Phila.	4.495c

TIN PLATE

(Per 100 lb. box)

Tin plate, coke base, Pitts.	$7.75

IRON AND STEEL PIPE

Base Pittsburgh

Base, Pittsburgh	Black Per cent off	Galv. Per cent off
¾ to 3 in., butt, steel	51	37½
¾ to 3 in., butt, iron	33	17

BOILER TUBES

Steel, 3½ to 4½ inches, l. c. l.	30
Iron, 3½ to 4½ inches, c. l.	12½

CAST IRON WATER PIPE

Without War Freight Tax

(Class B Pipe)

Class A pipe is $1 higher than Class B.

Four-inch, Chicago	69.80
Six-inch and over, Chicago	66.80
Four-inch, New York	70.70
Six-inch and over, N. Y.	67.70
Four-inch, Birmingham	63.00
Six-inch and over, Birmingham	60.00

HOOPS, BANDS, SHAFTING

Hoops, Pittsburgh	3.50c
Bands, Pittsburgh	3.50c
Hot rolled strip steel, Pitts.	3.50c
Hot rolled strip steel, Pitts. stamping quality	4.00c
Shafting, Pitts., carloads	17 off to list
Cotton ties, Nov., per bundle	$1.97

RIVETS

Structural rivets, Pittsburgh	4.40c
Boiler rivets, Pittsburgh	4.50c
Rivets ⅞ in. and small., Pitts.	50 and 10 off

NUTS AND BOLTS

(Prices f. o. b. Pittsburgh)

CARRIAGE BOLTS

(⅝ x 6 inches, smaller and shorter)

Rolled thread	50-5 off
Cut thread	40-10-5 off
Larger and longer	40 off

MACHINE BOLTS

(⅝ x 4 inches, hot pressed nuts)

Rolled thread	50-10-5 off
Cut thread	50-5 off
Larger and longer	40-10 off
Cold pressed semifinished hexagon nuts ⅝ in. and larger	60-10-10 off
Cold pressed semifinished hexagon nuts ⅞ in. and smaller	70-5 off
Gimlet and cone point lag screws	50-10 off

NUTS

Hot pressed, square blank	2.50c off
Hot pressed, square tapped	2.30c off
Hot pressed, hexagon blank	2.30c off
Hot pressed, hexagon tapped	2.10c off
Cold pressed, square blank	2.25c off
Cold pressed, square tapped	2.00c off
Cold pressed, hexagon blank	2.25c off
Cold pressed, hexagon tapped	2.00c off

Prices Present and Past

(Yesterday, a month ago, three months ago and a year ago)

Quotation on leading products November 13, average for October, 1918, average for August, 1918, and average for November, 1917. Prices are those ruling in the largest percentage of sales at the dates named.

	Prices Nov. 13, 1918	Average prices Oct. 1918	Aug. 1918	Nov. 1917
Bessemer, valley del., Pittsburgh	$36.60	$36.60	$36.60	$37.25
Basic, valley del., Pittsburgh	34.40	34.40	33.40	33.95
*No. 2 Foundry, Pittsburgh	35.40	35.40	34.40	33.95
*No. 2 Foundry, Chicago, furnace	34.00	34.00	33.00	33.00
Lake Superior charcoal, Chicago	38.70	38.70	37.70	37.50
Malleable, valley	34.50	35.90	34.90	34.45
Malleable, Chicago	34.50	34.50	33.50	33.37
**Southern, No. 2, Birmingham	35.25	35.25	33.50	33.50
*Southern Ohio No. 2, Ironton	34.00	34.00	33.00	33.00
Basic, eastern del., eastern Pa.	36.90	36.60	32.00	33.00
**No. 2X Virginia, furnace	38.00	37.50	33.50	33.50
**No. 2X, eastern del., Philadelphia	39.15	38.85	34.50	34.00
Ferromanganese, 70%, delivered	250.00	250.00	250.00	247.00
Bessemer billets, Pittsburgh	47.50	47.50	47.50	47.50
Bessemer sheet bars, Pittsburgh	51.00	51.00	51.00	51.00
Open-hearth sheet bars, Pittsburgh	51.00	51.00	51.00	51.00
Open-hearth billets, Pittsburgh	47.50	47.50	47.50	47.50
Steel bars, Pittsburgh	2.90	2.90	2.90	2.90
Steel bars, Chicago	3.17	3.17	3.17	2.90
Iron bars, Philadelphia	3.745	3.73	3.73	4.33
Iron bars, Cleveland	$ 3.64	3.64	3.64	3.64
Iron bars, Chicago mill	3.50	3.50	3.50	4.10
Beams, Chicago	3.27	3.27	3.27	3.00
Beams, Pittsburgh	3.00	3.00	3.00	3.00
Beams, Philadelphia	3.245	3.23	3.23	3.18
Tank plates, Pittsburgh	3.25	3.25	3.25	3.25
Tank plates, Chicago	3.52	3.52	3.52	3.25
Tank plates, Philadelphia	3.495	3.48	3.48	3.43
Sheets, blk., No. 28, Pittsburgh	5.00	5.00	5.00	5.30
Sheets, blue anld., No. 10, Pittsburgh	4.25	4.25	4.25	4.60
Sheets, galv., No. 28, Pittsburgh	6.25	6.25	6.25	6.50
Wire nails, Pittsburgh	3.50	3.50	3.50	3.50
Connellsville furnace coke	6.00	6.00	6.00	6.00
Connellsville foundry coke	7.00	7.00	7.00	6.60
Heavy melting steel, Pittsburgh	29.00	29.00	29.00	29.60
Heavy melting steel, eastern Pa.	28.50	28.50	28.50	27.50
Heavy melting steel, Chicago	29.00	29.00	29.00	28.50
No. 1 wrought, eastern Pa.	34.00	34.00	34.00	35.70
No. 1 wrought, Chicago	33.50	33.50	33.50	34.35
Rerolling rails, Chicago	34.00	34.00	34.00	35.70

*1.75 to 2.25 silicon. **2.25 to 2.75 silicon.

(FOR ADDITIONAL PRICES SEE PAGE 1156)

Pig Iron Buyers in Waiting State

Disposition Shown to go Slow With Future Commitments—Chicago District, However, Displays Considerable Market Activity—Allocations Going Ahead and no Cancellations Have Been Made—Big British Basic Order Delayed

Cleveland, Nov. 12.—No cancellations or revisions of allocations in pig iron made for government work yet have been called for, as far as can be learned. Producers are continuing to produce iron against these orders for various governmental purposes. In the meantime various new requests for allocations have come up during the past few days and probably 40 to 50 such matters now are going through the usual procedure. Considerable interest is being shown as to the effect of the armistice on the semisteel shell program which was to have called for a heavy tonnage of pig iron. Thus far only two or three allocations for this line of production totalling 75,000 to 100,000 tons have been made. It is understood those shops making these shells now on production have been instructed to continue their operations without change. Nothing has yet been done with the enormous inquiry from Great Britain for basic iron for 1919 delivery which is before the pig iron authorities for distribution. Great Britain had stated that if this iron was under order at the cessation of hostilities the metal would be taken nevertheless. However, since the order has not yet been distributed negotiations have been held up to more clearly consider the proposition from different angles. The inquiry as it stands calls for 50,000 tons monthly for all of 1919 and 100,000 tons or more for this year was included. For other allied countries about 100,000 tons of several grades were allocated by the committee on pig iron, iron ore and lake transportation during the past week. These included 40,000 tons of basic and 36,000 tons of foundry for November-March shipment to Italy and 26,000 tons of bessemer to France for November-January. Other allocations of the week to domestic buyers amounted to 30,000 tons of foundry, 11,000 tons of malleable, 9000 tons of bessemer, 7400 tons of low phosphorus, 2000 tons of basic and 1900 tons of charcoal, making the grand total of the week 164,000 tons of which over 88,000 tons was for 1919 shipment. Total allocations from May 1, now reach 1,783,000 tons. Nothing of importance has developed in the pig iron market in the past few days which may be ascribed to the influence of the armistice. Some inquiries and sales for 1919 shipment in the open market are continuing subject to the usual provisions as to government prices and requirements, but these have not been any more numerous than in recent weeks.

Too Soon for Effects

New York, Nov. 11.—Although thoughts and opinions in the pig iron trade for some time have been focused upon the conditions to come with peace, the actual signing of the armistice and the cessation of the war today have caused all such problems to be pushed aside temporarily. This section of the country is too flushed with joy and gratitude to consider seriously matters of business for the moment. For instance, the greater portion of the trade in New York city today is taking part in the endless parades which surge through the streets. Therefore, there as yet has been no opportunity for signs of readjustment to show themselves. In fact, business transacted in this district during the past week was of much the same character as in previous weeks. Numerous consumers, despite the clear indications of coming peace, have been willing to buy foundry iron for first half, and quite a few of them placed contracts with eastern Pennsylvania makers, thus reflecting their faith in the future. The business closed for first half involved several thousand tons. In addition, numerous allocations were made, involving in the aggregate a considerable tonnage of foundry iron. Careful thinkers in the pig iron trade seem to be almost a unit in believing that to ease the readjustment to peace, industry must continue to be regulated by the government. Such regulation, it is felt, must be of a flexible character to allow for all the factors which will arise. Generally,

it is believed that the establishment of minimum prices, to replace the present maximum prices, would be desirable, at least for a time.

In a Waiting Attitude

Pittsburgh, Nov. 12.—Both producers and consumers of pig iron are waiting for something to turn up. Nothing definite having come out with regard to the government plans for the new conditions brought about by the end of the war, a story of recent developments in the market is merely a recital of opinions rather than of facts. New inquiries are few and far between and probably will remain so until buyers have a clearer idea of what the cessation of hostilities means. Large tonnages of iron, chiefly of the steelmaking grades, continue to be moved but entirely on allocations. Some makers have allocations that call for deliveries to their regular customers and these interests are not much disturbed over the possibility either of requests for cancellation or that the delivery of the iron be held up. All blast furnace interests, however, are not thus favorably situated in the matter of the iron they are producing. It seems to be a general notion that the transitory period into which all industry now is entering will be marked by a considerable slowing down until there can be a relocation of iron and steel distribution. In the effort to try to gage the present by the past, much attention is directed to the conditions following the 1907 financial panic as a possible guide to a course now to be pursued. Some are of the opinion that a recovery from any depression that may result from the change from a war to a peace basis will be much more rapid now than it was in 1908. This belief is founded upon the elasticity of our currency system, the lack of which hampered more or less the rally of 11 or 12 years ago. It seems to be also a fairly general opinion that the government will assist in re-establishing the prewar order of affairs, at least to the extent of not making immediate the radical reductions in the war orders that have been distributed. The inflexibility of labor is the one big obstacle that seems to stand in the way of a quick completion of the changes involved through the end of the war.

Furnacemen Celebrate

Buffalo, Nov. 12.—Furnacemen were not to be located at their offices yesterday, except in rare instances. Those who had not gone out to celebrate said they could not anticipate any definite change in the market. It is the consensus of opinion that it is contingent on what the government does during the next few days in the matter of holding prices. The peace news is too hot yet to speculate upon its effect on the iron market. It is expected that there will be some cancellations eventually but that the government will carry the contracts along for some time to come.

Makers Sell More Freely

Chicago, Nov. 12.—As was indicated last week, makers of pig iron seem more inclined to book tonnages for first half of 1919 and considerably more activity is noted in the market. Inquiry has become much more active under the stimulus of a possibility of placing business and some tonnages are being cared for, although the general buying movement is not yet in evidence.

The leading northern maker continues to book contracts for regular customers engaged on what has been regarded as essential work and it seems likely that in a short time other users of pig iron will be able to place some of their requirements. A recent sale of 1500 tons of standard bessemer for delivery over the next three months has been made here, the iron to be furnished by a steel works stock to a large steel foundry interest.

An important southern producer has recently taken on some tonnage of foundry iron for first half of 1919, about 10,000 being known to have been placed in Chicago and its vicinity. A Tennessee producer of silvery iron has opened its books for the disposition of 4000 to 5000 tons of silvery iron for first half delivery. Other makers are also showing more interest in the market and offer such tonnage as they feel able to cover.

With an inquiry from Great Britain for 700,000 to 750,000 tons of basic iron, it is believed southern furnaces will find plenty of demand to cover their entire production for many months, in spite of the war ending. This tonnage desired by Great Britain is practically equal to half the annual production of furnaces in the South. Pig iron producers look at the immediate future without fear and believe there will be unusual activity and no sign of a slump in demand in spite of the tendency of melters to pause and wait for developments before buying. Apparently there are enough who have settled the question to their own satisfaction and desire to buy at once to carry the market over the soft spot.

Some Redistribution Expected

Cincinnati, Nov. 12.—It is too early to forecast what effect the cessation of hostilities in Europe will have on the market in common opinion. In some quarters it is claimed that the peace movement has been discounted and that few cancellations will result. According to indications there will be a continued urgent de-

World-Wide Reconstruction

Will Be Theme of The Iron Trade Review's Annual Number

INDUSTRY created destructive war which has served its purpose. It must now reclaim constructive peace.

Reconstruction has succeeded war as the big and pressing problem of American industry. It is the one object upon which the master minds and creative powers of the nation will be turned for many months to come. In its various phases the subject is fully as large and as far-extending as that which embraced the transformation of the country from a peace to a war basis. It is far more than national. It is international. But American industry and American resources are depended upon to play a leading part.

The IRON TRADE REVIEW *announces that its annual number to be published Jan. 2, 1919, will be dedicated to the subject of world-wide reconstruction. Plans to this end were completed some weeks ago and now are well under way. With peace at hand, a word on what is to be done may be given. The broad subject of reconstruction or the restoring of the world to a peace basis will be treated both from a national and from an international viewpoint. Not only what the United States is doing or plans to do for the new era now before the world will be presented from various angles, but likewise the subject will be treated fully as exhaustively from the standpoint of Great Britain, of France and of other leading nations. And it may be said that these countries have carried their preparations to a very advanced stage. This study of the situation in these foreign nations will be made by resident representatives of* THE IRON TRADE REVIEW *who have been constantly in touch with the development of these movements. This collection of articles will represent an international analysis of world conditions at the beginning of a period when all leading thought, political and commercial, will be directed along international lines.*

Many subjects related to the general topic of reconstruction, in addition to the usual yearly market review, statistics and other regular features of the annual number of THE IRON TRADE REVIEW *will be included in the Jan. 2 issue.*

mand for basic and malleable iron. Foundry iron now going into plants making munitions doubtless will be diverted to stove plants and other industries not on the essential list. Taking everything into consideration leading pig iron merchants here do not anticipate anything more serious than a short readjustment period necessary for the redistribution of iron.

Buyers Await Developments

Philadelphia, Nov. 12.—Pig iron buying for last half again proceeded on a fair scale last week. At least two eastern Pennsylvania makers participated in this business which was largely in foundry iron. The signing of the armistice, however, has put an end to such buying as consumers are awaiting developments on government contracts before committing themselves for the future. Practically the only demand now involves iron for shipment this year and only small tonnages are being sold. Action on first half basic requirements is being held up by consumers although the furnaces think that despite the expected cancellations of munition contracts, requirements will be such as to take up all the first half output of this grade. The same belief is expressed regarding foundry and low phosphorus irons. The Eastern Pig Iron association at a meeting last week discussed the forms of contracts which the furnaces have been using in selling first half foundry iron. Generally these contracts have been of two kinds. One involves the payment of the government price in effect at the time of delivery or if regulation ceases the last government price in force; the second specifies the government price in effect on delivery or if regulation ends, the government price in effect when the order was placed. The navy department, it is learned, still is naming the third quarter price on contracts, saying it had received no official notification of the changes effective Oct. 1. Pig iron allocations continue mainly for the first half of the year.

Buyers Becoming Conservative

St. Louis, Nov. 9.—Peace talk has caused a waiting attitude among all classes of pig iron users in this district. There is decidedly less eagerness to rush in and buy for distant deliveries, and important factors in the trade are carefully considering probable conditions which will obtain with the actual arrival of peace. There seems to be much more caution in the matter of buying at present high prices, users not wishing to be caught with extravagant inventories if there is to be a readjustment downward in finished products. Opinions are numerous and varied as to the future. Virtually all agree, however, that this is the time for conservatism.

Southern Production Increases

Birmingham, Ala., Nov. 9.—Pig iron production has increased, but not so much as had been anticipated. Raw material is more plentiful, as the influenza epidemic is over and labor is returning. No announcements have been made as to new furnaces being started. The allocations of the past week again include considerable basic for export. Whether this business will be kept intact when the war ceases remains to be seen.

Coke Call Less Insistent

End of War Raises Hopes of Lower Prices—Supplies More Nearly Adequate—Continue Shipments on Verbal Orders

Pittsburgh, Nov. 12.—Slowly but steadily the movement of coke to the blast furnaces is improving and while there still are some makers who are short of supplies and in danger of having to bank, the situation as a whole is much more comfortable than it was a week or 10 days ago. Congestion along the railroads serving the Connellsville region, especially the Monongahela road, still is rather heavy and it probably will take some little time yet to entirely clear up the accumulations. The effect of the influenza epidemic is waning in and around Connellsville, but some doubt is expressed as to whether or not this will mean an immediate increase in the coke production of the district. With the passing of the plague, the order which prohibited the opening of saloons has been lifted and it was observed that the men worked much more steadily. On the whole, it must be said that the demand for coke is not quite so insistent as it has been for the end of the war has given rise to hopes of lower prices. Under the provisions of the Lever amendment to the law giving the government control of fuel supplies and prices, the end of the war was named as the time when such control would cease. It is generally understood that this control will not end until the President has made official proclamation of peace. A good many producers have entered into contracts for supplies covering the first half of 1919. Some of these contracts include a clause whereby the last price named by the government before control ends shall hold, while others were made on a basis that called for a new agreement for the passing of fixed quotations. Some of the big producers have continued to ship to regular customers on verbal agreement at the government price and without written contracts. It is not believed that the blast furnace interests as a whole have normal supplies of coke but it is understood that the foundries are exceptionally well provided. Production of foundry coke has been stimulated by the extra $1 a ton this grade commands, and consumption at the foundries has been restricted by the fact that few of them have been able to run anywhere near full capacity.

Demand Continues Heavy

St. Louis, Nov. 9.—Some large inquiries for delivery during the first half of 1919 have been received by producers and selling agencies of coke this week. So far as the desire to acquire tonnages is concerned peace plans failed entirely to affect this market. There have been no accumulations by even strictly war industries, and nonessential plants continue to receive scant rations. For this reason the demand continues keen, users believing coke, especially metallurgical grades, will be scarce for months after peace arrives. While it is conceded that a readjustment downward in values is inevitable eventually, those men who are best informed say present prices will undoubtedly obtain at least to the end of next year. It will take at least that long for labor to become plentiful enough to increase coal production, and other costs going into coke manufacture will in all probability hold up for the next 12 months, in their estimation. So far as can be learned there is no hesitancy on the part of consumers in contracting for all the coke they can get booked for 1919. Deliveries so far this month have been moderately efficient only and well under the record of the corresponding time in October.

Coke Output Much Better

Birmingham, Ala., Nov. 9.—Coke production in Alabama is decidedly greater than it has been for three weeks, but the maximum output has not been reached. Production has been picking up steadily since the influenza epidemic subsided, the federal fuel administrator's figures for the week ending Nov. 2 showing an output of 347,557 tons as compared with 310,041 tons for the previous week. Announcement is made that the plans for obtaining cleaner coke are developing satisfactorily and the belief prevails that within another month a decided improvement will be noted. Some coke is still leaving this district for Mexico to be used in smelting plants.

Untested Market

Is Shown in Ferroalloys—Consumers Well Supplied for Future

Pittsburgh, Nov. 12.—Hesitancy and uncertainty still dominate in the market here for ferroalloys. Buyers are extremely cautious about new purchases and while few cancellations are reported there have been some attempts on the part of consumers to be relieved of tonnages due them and a number of requests for deferred shipments have been made. Quotations are unchanged, but this is chiefly because of a lack of business upon which to base new prices. If there is a definite tendency it is toward lower prices, for consumers as a rule are covered for the remainder of the year and will not be tempted to fill even piecing-out needs except at concessions. Apparently, there is sharp competition among makers of 50 per cent ferrosilicon to secure orders. A carload of this alloy for prompt shipment recently was sold at $150, delivered. The feature of this sale is not its size but the fact the seller had to take the business at the price or lose the sale. Quotations on 50 per cent ferrosilicon range from $150 to $160, but any price above the lower figure is more of an asking than a selling one. Little demand is noted for ferromanganese and inquiries for spiegeleisen have tapered off almost to the vanishing point.

Scrap Orders Are Dropped

Pittsburgh Reports Various Cancellations—Buyers Indifferent to Lower Offerings—Prices Continue to Display Softness

FOR COMPLETE SCRAP PRICES SEE PAGE 1156

Pittsburgh, Nov. 12.—Not only is there no buying of scrap, but cancellations of contracts involving good sized tonnages are becoming numerous. Seemingly, instructions have been given purchasing agents of steel mills that they are not to take on any more scrap for the present. One Pittsburgh dealer reports that he made a canvas of both the Cleveland and the Pittsburgh districts without finding anyone who was interested even to the extent of making a bid. It cannot be said that the lack of demand is a question of prices for attempts to secure business well under the maximum level have failed as often as have those when no concessions were offered. Although quotations have not been changed, because of the lack of transactions upon which to base new figures, the market plainly is a buyers' affair, particularly on low phosphorus, which is piling up as a result of the withdrawal of users of this grade and because there has been some heavy cancellations of orders. Heavy melting steel and baled and compressed material also are accumulating. At the moment, pessimism is rampant among dealers and it is rare to find one who does not expect materially lower prices during the adjustment to a peace basis. Consumers must also have this notion, for with the winter, with its delays in the movements of scrap coming, this ordinarily is the time when purchases for reserves are heavy. Pending some light on what actual peace is going to bring forth, an unsettled market with prices merely nominal is probable.

Won't Pay Differential

New York, Nov. 11.—No shading of prices has yet been reported in the New York scrap market, although there is much talk and the trade generally is expecting a break of some description shortly. So far, the only marked step in this direction has been the refusal of Pittsburgh consumers to pay the freight differential on heavy melting steel. The final advent of peace, and the resulting holidays, has reduced the volume of trading considerably, and everywhere, buyers and sellers alike, are moving cautiously. With the exception of low phos scrap, however, no particular weakness is seen in any description.

No New Purchases Made

Buffalo, Nov. 12.—There is no change in scrap prices as yet and no immediate change is expected. Many old contracts are out and mills have none too much scrap on hand, dealers believe, to cause a speedy weakening of the market. Many mills have not sufficient stocks to last more than a month. The fact that mills have not received the supply of scrap they have wanted during the past year, due to its shortage, will operate to keep the market from slackening. Dealers cannot forecast what will happen, but no radical development is looked for until the government moves. No new purchases are being made right now.

Market More Composed

Cleveland, Nov. 13.—The scrap iron and steel market in this district seems to have reacted from its panicky condition toward the end of the last week, which was the upshot of the premature armistice announcement, and at the moment is stronger than before the weak period set in. The general tone of the market, of course, is weaker, more from sentimental than actual reasons. But the pessimistic viewpoint of both dealers and consumers seems to have been shaken off, and most grades continue to be quoted at the government maximum or mighty close to it. Virtually no scrap is being sold to consumers, but dealers are buying. Little buying is expected for three weeks at least, consumers being well stocked and preferring to await developments before committing themselves further. The belief is being widely accepted that the period of readjustment will be extremely short, and that domestic needs will be rapidly filled. Consumption of scrap, accordingly, is not expected to lag a great deal behind the pace war set for it, and fewer dealers now predict a precipitate slump in prices.

Chicago Market Hesitates

Chicago, Nov. 12.—Trading in iron and steel scrap in the Chicago market is practically dead, with no demand on the part of consumers. Dealers with material they desire to move find it difficult to place. The rule seems to be to buy only what can be sold or used immediately and thus play the market safe. Some business is going on between dealers to provide tonnage to apply on contracts covering last quarter. Dealers with short sales made several weeks ago are able to cover their tonnage at reductions from previous levels. Quotations are somewhat weaker and on a number of grades rule 50 cents to $1 per ton under those prevailing a fortnight ago.

Trading Slow at St. Louis

St. Louis, Nov. 9.—The market for scrap iron and steel was extremely quiet throughout the week, mainly on account of peace talk. Trading is about as slow as at any period in recent months, consumers showing a decided disposition to hold off and await developments. The feeling is bearish and many of the leading users say they feel confident it will be possible to buy on much lower terms before the end of three months. Material, on the other hand, is still scarce and there is no inclination to press sales, despite the threatened decline. Yard stocks are fair only, but during the past 60 days mills and foundries in several notable instances have materially increased their stocks. Two of the larger mills have enough material to carry them through the winter and all the others are much better off in the matter of supplies than they were a month or six weeks ago. Deliveries on contracts have been on a large scale, and because of difficulty in obtaining labor certain consumers are asking their dealers to slow down on shipments. The American Car & Foundry Co., usually the largest scrap buyer, has been out of the market for some time and its works on either side of the river have been placed under an embargo. Prices are developing an easier tendency but no material change was made in dealers' lists this week. Steel is in relatively better demand than iron grades and is commanding steady prices. An east side mill had an inquiry out for a sizeable tonnage of steel, and anything suitable for rolling is readily taken. There are still many complaints relative to labor shortage, especially among the yard men. The influenza epidemic, while much less severe here than at other points, has still seriously cut into the supply of workmen. Railroad offerings continue light, the only ones before the market this week being a list of 1400 tons by the Wabash and six cars by the Frisco lines. Moderate tonnages are coming in from interior points.

Prices Fall As Buyers Hesitate

Birmingham, Ala., Nov. 9.—With prices descending as consumers hold off from the market, the scrap iron and steel situation here continues weak. The consumers and dealers are waiting for further developments incident to the restoration of peace. Considerable material is still moving but on old contracts. The dealers are buying just enough to keep up with requirements. With but two or three exceptions, all classes of material are quoted at from $1 to $2 per ton less than obtained at the first of the month. Some of the largest consumers of heavy melting steel in this territory have suddenly stopped their steady buying, expressing the belief that there will soon be a complete readjustment of the market. Railroad car requirements are being met and shipments are up to expectations.

Supplies Are Easier

Philadelphia, Nov. 13.—Supplies of scrap continue easier and this refers especially to heavy melting steel, wrought pipe, yard wrought and some other grades. Cast continues scarce. Thousands of tons of steel have been offered by dealers but the mills will not buy saying that they must wait to see what is ahead of them. Several of the mills last week said they probably would place large orders this week, but since the signing of the armistice declined to take action. No price consideration has been regarded in scrap but shading in steel would not cause surprise.

Need Tin Plate Orders

Pittsburgh, Nov. 12.—Notwithstanding the recent release of shipments of tin plate against the requirements

of the packers of baked beans and of containers for oil for export, the manufacturers require further business in order to bring mill operations up to the capacity permitted by the steel allotment. Sufficient steel supplies for 70 per cent of capacity operations are available, but the mills are averaging below that mark for want of larger orders.

No Cancellations

Of Railroad Equipment Orders Expected

New York, Nov. 12.—Railroad equipment manufacturers generally look for little in the way of cancellation. Practically their entire capacity is engaged in government work of one description or another, but as this production is essentially for construction and upbuilding, it is expected to continue, and on a larger scale than ever before. As yet, there hasn't been any particular evidence of demand that has accumulated as a result of the war, but this it is believed, will develop as conditions become more settled. This applies not only to domestic demand, but to inquiry from foreign countries, whose supplies of American products have been practically exhausted.

Production of locomotives, according to Chairman Baruch, of the war industries board, has increased approximately 100 per cent within the past two months. Last August, the government considered expanding $5,000,000 for the construction of new plants, but at the suggestion of the war industries board, this plan was abandoned. As reflected in the rapid increase in production, three companies recently produced 144 locomotives within a week. From 1910 up to last August, the highest number ever turned out in a single year was 3776, which would represent an average weekly output of 72.6 locomotives.

Small Spikes Still Wanted

Pittsburgh, Nov. 12.—There has been no let-up in the demands being made upon makers of small spikes, and lacking sufficient steel supplies they still are obliged to apportion their output among consumers. The railroads continue to order standard spikes merely as they require them; in fact, blanket contracts with subsequent specifications against them temporarily are out of vogue as a method of purchasing. Mills rolling standard rails are being pushed to the limit permissible through a force of workmen more or less curtailed through sickness or by peace celebrations.

Hurry Military Cars

Chicago, Nov. 12.—Carbuilders who have been given the recent order for military freight cars for use in France have received no instruction to let up in their speed and are bending every effort to turn out this order. It is believed the cars will be built and shipped regardless of ending of the war and will be utilized in reconstruction operations in France. Buying of light rails is being done sparingly and apparently only for immediate needs, as far as this country is concerned. Heavy exports continue to Japan and South American countries.

Lifting Ban on Building

Washington's Action in Releasing Steel Expected to Stimulate New Enterprise—Jobbers Seek Deliveries to Rebuild Stocks

New York, Nov. 11.—Conferences are being held today and tomorrow at Washington to consider proposed modifications of the embargo which hitherto has prevailed against all non-war construction. At these conferences which will be participated in by regional advisors from various districts and representatives of the war industries board, data showing the amount of new construction in pre-war times, and since the war will be reviewed. It is considered that as an outcome of the meetings, the ban on new construction will be lifted to some extent. New structural projects which have come up during the past week involve government work entirely. They include a light machinery and electrical shop for the New York navy yard, buildings at Yorktown, Va., for the navy department, and an extension to the plant of the Baltimore Shipbuilding & Drydock Co. No contracts of any magnitude have been let.

Jobbers Want Shipments

Philadelphia, Nov. 12.—Jobbers yesterday and today are urging mills to make quick shipments of structural shapes for replacement of stocks believing that because of the armistice the mills are in a better position to ship. The same conditions, however, as prevailed before the armistice continue and the mills are unable to ship anything lower than A priorities. Numerous structural projects are expected to be revived here as soon as the market restrictions are lifted.

Structural Tonnages Released

Pittsburgh, Nov. 12.—Suspension or curtailment of so much governmental construction has been something of a blow to the steel fabricators. While preliminary work on the building that has been abandoned had not progressed to a point where much material had been made up, a considerable tonnage is thrown back on the manufacturers, who, since the restrictions have not been lifted on private construction, naturally are somewhat concerned. The McClintic-Marshall Co., had the contract for the Alameda shipbuilding plant. The American Bridge Co., will suffer most by any change in the plans with regard to the government ordnance plant at Neville island. Mills continue busy on parts for ships for the Emergency Fleet corporation and are shipping freely against these requirements.

Chicago Bridge Is Up

Chicago, Nov. 12.—It is too soon after the cessation of hostilities for any change to take place in the matter of building construction and the ban of the war industries board has not yet been changed in regard to using structural shapes for other than war purposes. The only tonnage now pending in this territory is 8000 tons for a bridge and approaches over Chicago river at Michigan boulevard, on which figures were to be submitted today. Under present prices, it is not believed much commercial construction will be undertaken and that office buildings and similar structures probably will not be undertaken until fabricating material has reached a considerably lower level.

CONTRACTS PENDING

Light machinery and electrical plant at New York navy yard, 2000 tons, bids being taken.

Two groups of buildings to be erected at Yorktown, Va., by navy department, 250 and 1050 tons, respectively, bids being taken.

Extension to plant of Baltimore Shipbuilding & Drydock Co., Baltimore, 1500 tons, bids being taken.

More Supplies

Of Small Billets and Discards Appear —No Shell Cancellations

Pittsburgh, Nov. 12.—A larger supply of shell discards or small high carbon billets is reported in some quarters. In addition to the fact that mills turning out shell rounds have had no orders to stop production and are running full, the withdrawal or suspension of foreign barbed wire orders has released some soft steel for wire products and makers of the latter are less dependent than they were recently on shell discards. Supplies of soft billets still are scant, for production and distribution still are under governmental supervision. With regard to slabs, sheet bars and wire rods, conditions are unchanged and not much change can be expected until it is seen whether or not the government will retain its control of supplies and prices.

Supplies Still Limited

Youngstown, O., Nov. 13.—No improvement is shown in the sheet bar supply. Limited tonnages only are being rolled now. Producers are of the opinion that before long they will be in a position to meet the full demand for sheet bars. Most any time they expect to receive orders from the government cancelling its shell steel contracts. When these come makers say large tonnages of open-hearth steel will be available for other than shell steel purposes and that the sheet bar mills will get their pre-war allotments.

Cutting Down Munitions

Cleveland, Nov. 12.—Companies in this district with contracts for shells, guns and other related work have received advices through the ordnance department to continue production at regular speed for the next 30 days pending further instructions but that there would be no necessity for Sunday or overtime work.

Expect More Rod Output

Buffalo, Nov. 12.—The release of shell steel capacity it is believed will work out to the benefit of wire mills which can devote the capacity to wire rods.

French Buying Many Bars

Portions of Orders for 150,000 and 200,000 Tons for Commercial Needs Placed—Settle Classifications on Iron Bars

Youngstown, O., Nov. 13.—Statements to the effect that the French commission which has been in this country for several months will spend a great sum for American steel products with which to rebuild France are borne out by the orders already being placed. One maker here has taken on approximately 3500 tons of soft bessemer steel bars. This is a part of a requirement, the total of which is estimated at from 150,000 to 200,000 tons for first quarter delivery. No analyses are specified as long as the bars are of soft bessemer steel. However, the material will be thoroughly inspected as to size, quantity and finish. Shipment will be made immediately after government needs become less pressing which condition is expected to come about as soon as mill officials look for an early cancellation of certain government orders calling for bessemer material.

British shell-steel orders remaining on one Youngstown maker's books total in the neighborhood of 100,000 tons. Although the contract contains a substitution clause for the delivery of an equivalent tonnage of steel products, this maker is of the opinion that the British will take the steel as originally specified and is, therefore, going ahead with the order on that basis. French and Italian tonnages for shell steel on the books of valley makers are small and if the substitution clause in these contracts becomes effective they will not cause any delay in domestic shipments for similar material.

Settle Bar Iron Base

Chicago, Nov. 12.—Bar iron makers finally have decided to class bands ⅞-inch and lighter, half ovals and ovals at $5 per 100 pounds. Better material is required in these sizes to obtain correct results and they are worth the differential of $1.50 per 100 pounds over common bar iron. A fair demand continues for bar iron and some makers are booking additional business continually. In some instances consumers are asking that shipments be held up for the present, until the situation becomes clearer and it can be determined to what uses the material is to be put. In hard steel bars rerolled from rails specifications have suddenly become much lighter, a reversal of previous condition. Supply of old rails for rerolling is easier and much larger tonnages are coming out than earlier in the year. New business is much lighter.

Truck Orders Held Up

Cleveland, Nov. 12.—Recent orders distributed by the war department for 25,000 Class B motor trucks have been held up and their production at present is uncertain. A proposed order for about 20,000 military trucks of the 4-wheel drive type which was pending has been withdrawn. Such automobile builders as have expressed themselves on the situation entertain optimism as to the future and plan to engage upon large constructive programs. Some of the implement manufacturers who were holding back in availing themselves of the $5 price reduction now have come forward. Most of the producers in this line now put themselves in position to receive the concession.

Expect Bar Readjustments

Philadelphia, Nov. 12.—Bars are expected to be involved most largely in government cancellations since most of the mills of this type have been on shell steel. No bars are offered in the open market and the mills for the present are expected to go slow on future business as the 2.90c, Pittsburgh, price is far from satisfactory at present cost. A good volume of bar iron business is being booked by eastern mills as well as considerable bolt, nut and rivet tonnage for delivery in 60 to 90 days. There is considerable confusion among the eastern trade over the recent new schedule of iron bars adopted by the American Iron and Steel institute. This refers to the common merchant iron and the refined iron bar classifications. The former always has been known in the east as refined bars and the latter as double refined.

Cancellations Are Expected

Pittsburgh, Nov. 12.—Practically 100 per cent of the orders for cold-rolled shafting being for direct or indirect government work, it is expected that a good many orders will be stopped in process and undelivered tonnages cancelled, although no official instructions have come to the manufacturers in this district. Opinion is divided as to what the immediate future will bring forth. Some incline to the belief that the government will continue to exercise control over steel distribution and prices for some time, while other believe an open market is not far off. The manufacture of automobiles ordinarily absorbs such a big tonnage of shafting in one form or another that the thought that this industry will be among the first to get back to a peace basis is encouraging to producers. Steel supplies continue sufficient for mill operations of between 50 and 60 per cent, the plants not making their steel, making the better showing as they have their supplies allocated to them. Peace celebrations and the effects of the influenza epidemic have curtailed working forces to a considerable extent.

Operations Still Restricted

Pittsburgh, Nov. 12.—Operations of the merchant steel bar mills still are on about a 50 per cent of capacity basis. While greater rate of activity is possible later, steel available for this purpose still is limited and probably will be until a clearer line can be had on after-war plans. No let-up has been observed in the demand for iron bars but this is only natural in view of the fact that considerable tonnages have been ordered to replace steel, and as such, have not been vitally affected by the war program.

Supply and Demand Small

Pittsburgh, Nov. 12.—Both the demand for and the supply of hoops and bands are small. Automobile makers have secured permits for small tonnages of rim stock but outside of this business moderate purchases by cooperage interests and a few replacing orders from the jobbers little is going on. Some makers are running only about one-third capacity, but report no trouble in filling their orders. Curtailment in the supply of steel in this division is not affecting the volume of business.

Bolt Demand Brisk

Chicago, Nov. 12.—Consumers of bolts and nuts continue to seek material in large volume and makers are willing to book more than they formerly felt they could take on. There is much activity in this department, which does not seem to be affected by the approach of the war's end.

Sheet Makers Study Market

Hold Meeting in Pittsburgh to Discuss Situation—Various Cancellations Reported in Valley—Want Priorities to be Modified

Youngstown, O., Nov. 13.—Valley steelmakers have been thrown into a flurry on account of the sudden cessation of hostilities. It is reported many buyers are cancelling orders for sheets placed recently in this territory. One maker who is shipping heavy tonnages of corrugated galvanized to France states he as yet has not received any notice of cancellation. Nevertheless, nearly every sheetmaker in the valley has a representative attending a meeting today of the National Association of Sheet & Tin Plate Manufacturers in Pittsburgh. Makers are inclined to be in the dark as to how far they can go in securing domestic business and it is thought something definite concerning this matter will be worked out at this meeting. The time for booking first quarter business has now arrived but here again makers are in a confusing position. The question in their minds is whether or not the government will fix prices again effective Jan. 1, and if it does, whether they will remain stable or will be increased.

Another question before the sheetmakers right now is whether it is up to them to abide by priorities. Some are of the opinion that if the government should cancel its orders, then priorities would automatically become null and void. Otherwise a regular customer would receive unfair treatment. As an illustration take a building contractor. Unless he has been doing government work his supply of sheets has been cut off for many

weeks and the best he could do was to have his order kept on the books. The ban on building has been lifted and the contractor is now in a position to expect his order for sheets to be fulfilled.

The supply of sheet bars has not increased to any noticeable extent although when the government cancels its shell-steel contracts among valley makers as it presumably will, there will be a ample quantity of open-hearth steel available.

Running About 50 Per Cent Full

Pittsburgh, Nov. 12.—There has been no special change in the situation in sheets. The Vandergrift plant of the American Sheet & Tin Plate Co., which has been down for several weeks, started up today. As a whole sheet mill capacity is engaged to about 50 per cent. Heavy government contracts are on the books of the makers who are going ahead on these requirements in the lack of official instructions to do otherwise. Much speculation is current with regard to the sheet requirements of the automobile industry. This business is looked to make a more rapid change to a peace basis than a good many other industries. But, while this expectation may be fulfilled and the word is going the rounds that the makers of cars already have started making plans for the change, it is doubtful if this will bring any immediate placing of orders for sheets. The automobile industry is pledged to a maximum of 25 per cent of 1917 production of pleasure cars until the end of the year and the war industries board would have to sanction any departure from this pledge and also have to issue permits for sheet purchases.

Still Place Plate Orders

Chicago Mills Get 30,000 Tons for Pacific Coast Shipyards—Eastern Makers Get Rush Orders—80,000 Tons for Alameda Held up

Chicago, Nov. 12.—The leading interest has just been allocated 30,000 tons of ship material, principally plates, for shipbuilders on the Pacific coast. This is the only large tonnage placed within the past few days in this market. The determination not to build the shipyard of the Bethlehem Shipbuilding Corp. at Alameda, Cal., leaves about 80,000 tons on the books of a mill in Chicago, which has not been cancelled and on which no action has been taken by the government. It seems probable it will be allowed to stand and eventually will be dropped. No move has become apparent yet as to the intention of the government for the future, but the general belief is held that the demand for plates to go into ships will continue strong for a year or two. In the meantime other consumers will be there to obtain some material and the change to peace conditions will be easy.

More Allocations Received

Philadelphia, Nov. 13.—Plate makers during the past week continued to receive allocations from the Emergency Fleet corporation. Despite the armistice the Fleet corporation on Monday telegraphed some allocations. Among the week's developments were the booking of some A-6 orders from jobbers for quick shipment. The jobbers have been intimating to the mills that now that the armistice is signed they expect stock replacement shipment. The reply of the mills is that they are in the same position as before. Some car plate tonnage is expected out shortly. Eastern makers are still slowly recovering from the influenza epidemic. They are now operating from 75 to 80 per cent of capacity.

Production Holding Up

Pittsburgh, Nov. 12.—No let-down is observed in the activities of the plate mills in this district beyond that which has resulted from the fact that quite a few workmen have been out sick or taking part in peace celebrations. Lacking any official word from the government as to its plans, the manufacturers are making every effort to catch up with the heavy tonnages that have been ordered. Car builders have had a realignment of their allotments of plates and are now getting a greater supply for use in connection with the French order recently placed, than for cars to be built for the railroad administration. The output of sheared universal plates of the Carnegie Steel Co. in October came within a few hundred tons of reaching the high record mark. The total output for the month was 125,252 tons as compared with 125,480 tons, the high mark established last May, and 120,279 tons in September. The October production of the 110-inch Liberty mill was 20,348 tons which was 1203 tons more than this mill turned out in September and only 525 tons under the record for one month established last May.

Going on in Valley

Youngstown, O., Nov. 13.—Peace has not suspended the rolling of government ship plates among valley mills although in the opinion of some makers here contracts for certain orders for this material will be cancelled. Orders which they believe will be affected are those calling for small sizes and gages originally intended for the construction of small ships.

Ahead of Program

Cleveland, Nov. 12.—Leading lake shipyards are considerably ahead of their construction production under their contracts with the Emergency Fleet corporation. They are calling for delivery of certain classes of plates in December which originally were not expected to be shipped until some time after Jan. 1.

Wire Shipments Extended

French Government Modifies Deliveries on Barbed Wire—Makers Generally Selling as More Steel is Available to Mills

Philadelphia, Nov. 13.—A request has been made by the French government upon manufacturers of barbed wire to extend deliveries over three months which had been scheduled for two months. The only cancellations so far received in wire products are those covering barbed wire for the Italian government. Some orders for spikes have been held up. A Pittsburgh district maker has been offering fence wire in this district and has made large sales during the past week.

Jobbers Not Responding

Pittsburgh, Nov. 12.—Now that the situation in the matter of supplies of wire and wire products is easier, and manufacturers are in a receptive mood with regard to jobbers' orders, some actually soliciting their regular customers for business, it is the general report that the response is disappointing. Little doubt exists but that these factors are anything but well supplied, but finding their requirements getting more attention, they seem to have the notion that prices will be lower and are holding back. Moreover, the terms of any business that may be booked are unsatisfactory. No specified delivery is offered and current prices stand regardless of any subsequent development. One Pittsburgh company, which recently had its allocation of barbed wire for Great Britain cancelled has been ordered to make 1000 tons of this product for immediate delivery to Great Britain. It is stated that if this tonnage does not find a military use it will be put to some ordinary need. Tremendous demands for wire for fencing are said to exist.

Considerable Tonnage Booked

Cleveland, Nov. 12.—Orders from regular customers for various wire products continue to be taken by different producers to be shipped as the mills are able and at maximum prices prevailing for the current quarter. No contracts are being taken and only orders with specifications are being accepted. The leading producer has sold a considerable tonnage both to the jobbers and consuming trade in this way based on their 60-day requirements.

Tie Season Over

Pittsburgh, Nov. 12.—Orders for cotton ties have all been filled and shipped and the mills engaged on this product have suspended operations for the season. This market will remain closed until along about the first of May, when makers will open their books for a new season's requirements. The closing price for ties was $1.97 a bundle of 45 pounds.

War Restrictions on Iron and Steel are Cut in Half by War Industries Board

Ban Lifted on all Public Utilities Work and Other Enterprises of Heavy Requirements —War Department to Abandon Projects Not Already Started

WASHINGTON, Nov. 12.—Restrictions which have been in effect on the steel-consuming industries of the country have been cut in half and the ban on building construction has been practically removed as a consequence of the announcement of a new priority circular, No. 57, by Chairman Edwin B. Parker of the priorities committee today. This is the first concrete action by the board in removing restrictions and curtailments which were placed upon industries to assure an adequate production of war material.

By removing the ban on these projects and industries the board specifies that precedence must be given to the program to increase the production of cargo ships and to supply the requirements of the army and navy of the United States, to materials intended for reconstruction and rehabilitation of devastated territories of Europe and to activities intended to stimulate the production of food, coal, gas, oil, textiles, clothing, minerals, railroad supplies, and the improvement of waterways, telephone and telegraph lines and public utilities.

Unlimited removal of restrictions is authorized on all railroad, public utilities, telephone, telegraph, municipal and state projects, water, sewer, light and power development, irrigation, drainage, mining and refining, food production, farm and agricultural construction.

The cost limit of new schools, churches and buildings for municipal and state purposes is raised to $25,000. All other building construction is limited to $10,000, except those projects passed upon by state councils of defense, when the limit may be raised to $25,000.

In cutting restrictions on the consumption of steel one-half the board means that where curtailment has been 50 per cent, the consumption now is to be restricted to only 25 per cent, and so on in lesser proportions. All limitations as to the use of lime, brick, cement, hollow tile and lumber have been removed.

The industries in which curtailments have been cut one-half include those producing agriculture implements, road machinery, stoves, bicycles, corsets, clocks, lawn mowers, etc. Except as provided in new limitations on building materials, dealers in raw materials, semifinished and finished products are no longer required to give or accept pledges. Manufacturers' pledges are to be continued, but the manufacturers are not required to receive pledges from customers.

Chairman Parker says the board will continue to give priority assistance as far as practicable in helping industries procure materials, fuel, transportation and labor. The board requests and expects continued co-operation of industries in order that readjustments may be made as successful as possible.

Baker to Cancel Projects

Secretary of War Baker said today that projects authorized by his department but not started will be abandoned, and the matter of curtailing work on other projects now under way will be the subject of a conference between the war and labor departments.

The labor problem develops as the most acute problem in connection with reconstruction. The government, by fixing wage scales and by influencing other industries, particularly the iron and steel industry, in wage agreements, has encouraged high labor costs.

Some government agencies, notably the railroad administration, have refused to come into the market for essential materials, hoping to benefit from lower prices after the war. This policy might have serious results for the high-cost producers who may curtail production and throw labor on the market.

The war department is guided in its curtailment plans by consulting with the labor department. It is understood labor leaders are much perturbed over the situation and that they will have much to say in the national reconstruction program.

British Reconstruction Plans Far Advanced

(Staff Cable)

London, Nov. 11.—The ending of the war with Germany's acceptance of the allies' armistice terms finds England far advanced with plans for reconstruction. The British army will be demobilized in accordance with the relative importance of various industries in need of labor. Shipbuilders and steelworkers will be the first to be brought home. A demobilization board, headed by Sir James Stephenson, now is working out the details. Government control of prices and priorities will be continued temporarily, with the object, according to Winston Churchill, minister of munitions "to liberate the forces of individual enterprise and to release them from control now found galling." The government is placing orders for railway equipment, building material and other supplies, which will keep plants busy and have a steadying influence on labor.

This is England's greatest day.

Committee Plans Readjustment of Boards

WASHINGTON, Nov. 12.—With the near approach of peace, increased interest is being manifested with regard to the extension of the life of organizations arising from the war. Already action in this direction has taken well-defined shape. The first specific step taken in this connection was announced last week when it was made known that a special committee composed of Chairman B. M. Baruch, of the war industries board; Chairman Vance McCormick, of the war trade board; Fuel Administrator Harry A. Garfield; Food Administrator Herbert Hoover and Chairman Edward N. Hurley, of the shipping

board, has been organized and is considering the matter.

Amendatory legislation by congress will be necessary to bring about the extension of the life of these organizations and, it is assumed, will be asked. Whether it will be granted is another question. The recent republican victory may mean a defeat

Plainly it is a debatable question, if judgment is to be based upon the opinions heard in Washington from various sources, some well-informed business men, for instance, thinking continuance of these organizations for a certain period after peace is proclaimed is necessary to stabilize conditions and to place them gradually on a normal peace basis. Others believe that they should be disbanded as quickly as possible after the war and allow the industries of the country to adjust themselves to the new peace conditions.

The parent of all of these organizations is the council of national defense, either directly or indirectly. This organization was created through a provision in the army appropriation act of the sixty-fourth congress, and approved on Aug. 29, 1916, or practically eight months before the United States declared war against Germany. It is, therefore, a statutory body with no provision made for its disorganization, and, with war in prospect, was created to co-ordinate industries and resources for the national security and welfare. It consists of the secretary of war, the secretary of the navy, the secretary of the interior, the secretary of agriculture, the secretary of commerce and the secretary of labor; and under the authority it was granted it organized subordinate bodies, some of which subsequently became independent organizations.

One of these is the war industries board, whose duties and importance to the steel industry are so well known that no discussion need to be made with regard to them. Under the Overman act, approved May 20, 1918, authorizing the President to co-ordinate or consolidate executive bureaus, agencies and offices, and for other purposes "in the interest of economy and the more efficient concentration of the government," the war industries board was made an independent body and given powers authorized under the Overman act.

The Overman act itself "shall remain in force during the continuance of the present war and for six months after the termination of the war by the proclamation of the treaty of peace, or at such earlier time as the President may designate."

Some officials think the war industries board automatically goes out of existence with the proclamation of peace. In any event it cannot continue, in the absence of further legislation, for longer than six months after peace is declared. If it can continue for this period without additional legislation, there is a belief that this will be sufficiently long, or, indeed, that it might be disorganized sooner than that. It is certain that industries of the country coming under its control will desire to be relieved of its restrictions as soon as economic conditions warrant.

The priorities shipment act was passed by congress Aug. 10, 1917, long before the assumption of the control of the railroads by the government was considered necessary. It was not concerned with the priority of manufacture, which is today the function of the war industries board, but an authority closely relating thereto. The authority to dictate priority of shipments was delegated by President Wilson to Judge Lovett, a member of the war industries board, himself an experienced railroad man. Since the establishment of the railroad administration the need of the priorities shipment act has not been felt and there will be no necessity for invoking it so long as the railroad administration and the war industries board and the supply divisions of the government continue to work in harmony. The act, however, expires with the issuance of the peace proclamation.

The railroad administration act, providing for federal control of the common carriers of the country, was approved March 21, 1918, and is to continue in force for 21 months after peace is declared. This act provides for the collective expenditure of enormous sums through a centralized source for equipment, money which otherwise might not have been spent in such volume under private control and which then would have been paid out in smaller individual sums.

The act creating the United States shipping board was approved on Sept. 7, 1916, or exactly seven months before war was declared by the United States against Germany, and it carries a provision that at the expiration of five years from the "present European war the operation of vessels on the part of any such corporation in which the United States is then a stockholder shall cease and the said corporation stand dissolved."

Both Chairman Edward N. Hurley, of the board, and Director General Charles M. Schwab, of the corporation, have announced in positive terms that the shipping program will be continued without abatement after peace is declared in connection with the upbuilding of a merchant marine so that it is assured heavy requirements for ship steel will continue to come from this source. As a matter of fact it is reported that the corporation is about ready to announce anticipated requirements for steel up to July 1, 1919.

Both the food and fuel administrations, under existing provisions, would go out of existence upon the proclamation of peace. Before being created as distinct organizations, they were committees of the council of national defense.

The war trade board was created originally under the espionage act and later given its present status under the trading-with-the-enemy act, and, unless additional legislation is provided, it will expire with the proclamation of peace. It has control of exports, imports, enemy trade, war trade intelligence and overseas transportation. Another war-born organization is that under the alien property custodian, also created under the trading-with-the-enemy and the espionage acts.

On Oct. 5, 1918, the President approved the minerals control act, carrying $50,000,000. Under this law, the

Baruch Outlines Board's Plan for Industrial Transition

FOR some time to come, a period to be determined by the war-making agencies of the government, government contracts must continue on a wide scale. This circumstance applies to a considerable share of present contracts.

As the demand for raw materials is lessened by the reduction of war requirements and the cancellation of war contracts, if such cancellations are made, the raw materials thus made available will be released and allocated by the war industries board for use in supplying civilian and export demands which have been held in check during the war. In addition to the ordinary commercial requirements there will be a heavy flow of materials thus released to supply the demand for the great reconstructional work required by the European countries.

At the same time there is to be a gradual lifting of the restrictions and curtailments that have been imposed upon industry by the exigency of the war so as to allow as promptly as possible free flow of all supplies into peace channels.

The war industries board will continue to exercise its functions until the peace treaty is signed, to the end that the readjustment of the matters on which it has been acting may be made in as orderly a manner as possible.

A committee named by the President has been and is now at work to devise the best mechanism of bringing about the adjustments from a war to a peace basis. The report of the committee may take the form of suggested legislation.

The whole effect of the readjustment plans will be to the end of bringing about necessary changes with as little dislocation as possible and the full opportunity for all to benefit as in the past by individual ingenuity, vision and fair dealing.—Chairman Baruch, of the war industries board.

President may through a corporation, financed from this appropriation, enter into contracts with domestic producers and take their output at prices set in the contract at figures which will be reasonably remunerative. Both central and local corporations may be organized for this purpose. The contracts made under this act shall not cover a period longer than two years after the termination of the war. Products affected by the act include in part, the following: Antimony, ball clay, bismuth, chromium, cobalt, iridium, magnesite, manganese, molybdenum, platinum, phosphorus, pyrites, sulphur, fluorspar, ferrosilicon, tin, titanium, tungsten, uranium and vanadium.

The act providing federal control of the telegraph and telephone lines was approved on July 16, 1918, and provides that it shall remain in effect for the duration of the war.

War Finance Corporation

The act creating the war finance corporation was approved on April 5, 1918, and provides credits for industries and enterprises in the United States necessary or contributory to the prosecution of the war, and for the supervision of the issuance of securities. Under this act the secretary of the treasury and four others, who constitute the board of directors, form the corporation. In no event, the act says, shall the corporation exercise any of the powers it confers, except such as are incidental to the liquidation of its assets and the winding up of its affairs, after six months after the termination of the war.

There has been no legislation governing labor, except in certain measures in which stipulations as to hours were provided. The selective service act, of course, applies to labor directly, but is only for army manpower, and consequently will be suspended when the war ends.

Gary Calls for Confidence and Teamplay

NEW YORK, Nov. 12.—Chairman E. H. Gary of the Steel corporation sounds a note of high optimism and confidence for the present period of readjustment and in the future commercial situation of the country in a lengthy statement given out today. He said:

"The most stupendous, the most costly, and the most destructive of all wars, involving a multitude of questions that are vital to civilization, has been brought to a close. An organized, prepared and cruel foe has been beaten decisively. Advocates of the doctrine that might is right now are convinced of their error, if indeed any were genuinely sincere in their advocacy. An overruling providence has controlled the destinies of men and nations and has provided for the betterment of the human race.

"All of us are grateful that peace has been restored and our hearts are possessed by a feeling of intense joy. We need not wait for Thanksgiving day to give thanks for the mercies bestowed upon us.

"There are many reasons why the armies of the allies and the United States have been victorious. Volumes will be written on the subject. Credit for winning the war will be claimed by or in behalf of various countries, classes or individuals. The American soldier is surely entitled to praise and he will receive it without stint. The soldiers of all other countries are equally deserving. The statesmen of the United States and of all other nations by reason of ability, integrity of purpose and an unyielding lovalty have contributed their share. There is glory enough for all.

Great Lesson of Co-operation

"The final and controlling reason for success is found in the fact that during the last months of the conflict there has been a unity of purpose, a co-ordination and concentration of action, and a spirit of co-operation between nations, between armies and between individuals. In the United States at least, we have learned by experience how much can be accomplished when the masses of the people are working in harmony with each other and with those in control of government affairs, to secure a well defined and much desired result.

"We now are confronted with innumerable problems of magnitude. Around the peace table there will be presented questions of difficulty involving the social and economic welfare of the people of all countries. It will require the best talent and wisdom, patience and poise to secure for the respective countries all that they are justly entitled to in privilege, position and protection. Human nature will assert itself. Unreasonable and selfish demands will be made and insisted upon. Undue advantages will be sought.

"To be of value and durable, a basis of settlement covering all substantial and honest differences which existed when the war commenced or have arisen since, must be settled in accordance with the principles of exact justice. Equal protection and opportunity for all must be established. Above everything else, there will be created a league of nations, which, in its result, will prevent future wars. Of high importance are the economics which must be faced in the near future. They underlie the procuring of food, clothing and shelter. After, but not before, the people throughout the world receive these they are willing to consider other matters. These subjects will engage the best and most experienced minds.

Business Readjustment Looms

"The war with its cost in men and dollars will bring reactions and readjustments with possible economic demoralization and depression, and possibly panics, and we must be on our guard.

"It is probable that, after the declaration of peace, when it becomes evident that purchases or deliveries for military purposes are reduced in volume, there will be more or less interruption in the conduct of general business. Therefore it is imperative that we exercise prudence, deliberation and courage. Much depends upon the attitude and the speech of men. It is easy to precipitate a feeling of demoralization and no more difficult to develop a sentiment of confidence and serenity.

"There will be a normal and certain volume of business. This would not be increased by unreasonable or unfair means. There will remain the usual revenues, methods and opportunities for securing and transacting business with old customers and acquaintances. Any spasmodic effort to divert or interfere with the natural progress or secure more than a proper share, will, as a total net result, impede rather than accelerate prosperity. We must all trim our sails in accordance with the drift and amount of business. If all business men recognize the conditions and conduct their different lines so as to adjust the questions of supply and demand on a legitimate basis, all will be benefited and may look forward with confidence.

Prosperity Should Continue

"Upon a careful survey of the situation it would be found there are many reasons for believing prosperity in this country should be continued. The United States is the richest of all countries. It possesses one-third or more of the total wealth of the world. It has become the leader of finance, and in this respect may properly exercise a commanding influence. Its natural resources are immense and are susceptible of increasing development. If industry is protected and fostered in accord with its merit, the war burdens surely, even though gradually, will be lifted. We shall be a creditor nation with a large interest and income, more virile, more progressive, more successful, wiser and better than ever before.

"And judging the future by the experience of the last few years, there will be a disposition, on the part of those in authority to assist rather than to attack business effort. There will be study, reflection and friendly concern shown in relation to the needs and requests of enterprise and investment. Legislation and administration will be founded upon ascertained conditions. The deficiencies and requirements of both capital and labor will be protected and rewarded. Employers will lead in the effort to promote the welfare of their workmen.

"Co-operation will be seen on every hand. Capital and labor will continue to co-operate with governmental administration and the latter will reciprocate in every practical and proper manner. This spirit has been exhibited in a marked degree in this country and other countries during the last four years, and its benefits have been demonstrated so clearly that they will not permit a return to the methods of destructive competition.

"As to the volume of business to

(Concluded on Page 1114)

Ingot Output

During October Sets Record for Year —Yearly Rate Grows

Steel production in October set a new 1918 record. The output was approximately 3,845,000 gross tons or at the yearly rate of 45,250,000 tons. The September output was approximately 3,675,000 gross tons, an annual rate slightly in excess of 45,000,000 tons.

These figures are based on the monthly statistics of the American Iron and Steel institute, covering reports from 29 steel companies which in 1917 produced 85.10 per cent of the country's total steel output. These companies last month produced 3,343,916 gross tons against 3,197,658 tons in September and 3,287,233 tons in May, the next best month in 1918. October, 1917, with 3,351,935 tons is the record month.

The upturn was reflected at both open-hearth and bessemer plants. Open-hearth production was 2,519,496 gross tons against 2,407,993 tons in September and 2,475,131 tons in May. Bessemer production was 807,043 tons in October, 772,863 tons in September and 796,244 tons in May.

The average daily production by these companies in October was 107,868 tons against 106,589 tons in September and 99,473 tons in August. October, 1917, holds the record with a daily average of 108,127 tons.

Production figures of the institute since June, 1917, are as follows:

Months	Open hearth Gross tons	Bessemer Gross tons	All other Gross tons	Total Gross tons
1917				
June	2,265,772	809,552	8,605	3,083,929
July	2,152,479	777,171	9,465	2,939,115
August	2,251,013	863,873	8,331	3,123,217
September	2,195,556	770,064	6,639	2,972,259
October	2,475,754	870,494	5,687	3,351,935
November	2,384,218	772,489	9,550	3,166,257
December	2,195,832	524,084	13,806	2,733,722
1918				
January	1,763,356	429,588	10,901	2,203,845
February	1,805,233	454,457	14,051	2,273,741
March	1,331,048	763,255	16,078	3,110,381
April	2,377,974	769,249	16,187	3,163,410
May	2,475,131	796,244	15,858	3,287,233
June	2,281,718	786,380	15,348	3,083,446
July	2,311,545	784,997	17,093	3,113,635
August	2,299,177	766,860	17,643	3,083,680
September	2,407,993	772,863	16,802	3,197,658
October	2,519,496	807,043	17,377	3,343,916

Ford to Build Tractor Plant in Mexico

It is announced that the manufacture of Fordson tractors in Mexico will be done by a company which will be organized for that purpose under the laws of Mexico. The commission sent to Mexico by Henry Ford has made its investigations and returned with a report which is said to be entirely favorable to the project.

The commission was composed of E. G. Liebold, secretary to Henry Ford, Gaston Plantiff, export manager for Mr. Ford, and A. B. Jewett, moving picture director of the Ford Motor Co. They spent two weeks looking over the Mexican field.

It is expected that the engineers of the Ford Motor Co. will arrive in Mexico in about a month and that Monclova, in the state of Coahuila, will be the site of the factory, as it is the most favorable point at which coal and iron can be obtained. Mr. Ford has declared that none of the money made in the business will be taken out of Mexico, but will be used in increasing output and wages and bettering the conditions of the employes. The Mexico plant will not be on as extensive a scale as those in the United States, but it will keep pace with the demands of the market in Mexico and the Central American countries, it is announced.

October's Steel Tonnage Shows Some Gain

An increase in the unfilled bookings of the United States Steel Corp. is shown in the report as of Oct. 31, the total being 8,353,293 tons. This compares with 8,297,905 tons the preceding month, and makes for a gain of 55,388 tons. The first previous gain was made in June, when unfilled bookings aggregated 8,918,866 tons. A comparison of the corporation's unfilled orders at the end of October since the outbreak of the war in Europe shows that in 1914 these amounted to 3,461,007; in 1915, to 6,165,452; in 1916, to 10,015,260; and in 1917, to 9,009,675 tons. Further comparisons follow:

Date.	Total.	Change, tonnage.	Change, per cent.
Oct. 31, 1918	8,353,293	55,388+	.668+
Sept. 30, 1918	8,297,905	461,137—	5.26—
Aug. 31, 1918	8,759,042	124,759—	1.40—
July 31, 1918	8,883,801	35,065—	.39—
June 30, 1918	8,918,866	581,243+	6.90+
May 31, 1918	8,337,623	404,259—	4.60—
Apr. 30, 1918	8,741,882	314,522—	3.47—
Mar. 31, 1918	9,009,675	232,049—	2.49—
Feb. 28, 1918	9,288,453	189,400—	1.99—
Jan. 31, 1918	9,477,853	96,135+	1.02+
Dec. 31, 1917	9,381,718	484,612+	5.44+
Nov. 30, 1917	8,897,106	112,569—	1.24—
Oct. 31, 1917	9,009,675	823,803—	8.37—
Sep. 30, 1917	9,833,477	573,572—	5.51—
Aug. 31, 1917	10,407,049	433,115—	4.16—
July 31, 1917	10,844,164	539,123—	4.74—
June 30, 1917	11,383,287	503,304—	4.24—
May 31, 1917	11,886,591	296,492—	2.43—
Apr. 30, 1917	12,183,083	471,439+	4.02+
Mar. 31, 1917	11,711,644	134,947+	1.16+
Feb. 28, 1917	11,576,697	102,643+	0.90+
Jan. 31, 1917	11,474,054	73,232—	0.64—
Dec. 31, 1916	11,547,286	488,744+	4.43+
Nov. 30, 1916	11,058,542	1,043,282+	10.41+
Oct. 31, 1916	10,015,260	492,676+	5.18+
Sep. 30, 1916	9,522,584	137,133—	1.42—
Aug. 31, 1916	9,660,357	66,765+	.69+
July 31, 1916	9,593,592	46,866—	0.48—
June 30, 1916	9,640,458	297,340—	3.09—
May 31, 1916	9,937,798	108,247+	1.11+
Apr. 30, 1916	9,829,551	498,550+	5.34+

Makes Record Gift

A donation of $5,000,000 to the united war work fund has been made by the United States Steel Corp., as announced in New York recently by George W. Perkins, chairman of the committee on industries of the united war work campaign. This is the largest donation ever made by a corporation to a charitable or war relief organization. The previous largest gift was $2,000,000, which the United States Steel Corp. gave to the Red Cross society in its last campaign.

New Prices

Announced on Higher Grades of Bessemer Ferrosilicon—Other Changes

Prices on the grades of bessemer ferrosilicon above 13 per cent are established in a new price announcement issued by the committee on steel and steel products of the American Iron and Steel institute under date of November 14. These differentials over the base price of pig iron are to extend the ferrosilicon schedule announced Sept. 26 which provided for the 10, 11 and 12 per cent grades.

Some further announcements in the wire rod and warehouse trade schedules also are made.

Chairman Gary of the committee in making the new announcement said:

The committee on steel and steel products has received from a subcommittee reports based on information received from representative manufacturers of various lines of steel and steel products, and from such reports and other data available the committee has concluded that certain additions to and changes and modifications in the differentials and extras, etc., as heretofore recommended by the institute are fair and reasonable and the committee recommends that such revised differentials and extras be adopted.

Bessemer Ferrosilicon

To the differentials for Bessemer ferro-silicon recommended under date of Sept. 26, 1918, add the following.

13 per cent	$37.00	per gross ton	above base
14 per cent	45.00	per gross ton	above base
15 per cent	51.00	per gross ton	above base
16 per cent	54.00	per gross ton	above base
17 per cent	57.00	per gross ton	above base
18 per cent	60.00	per gross ton	above base
19 per cent	60.00	per gross ton	above base
20 per cent	66.00	per gross ton	above base

The above differentials apply to ferro-silicon whether made in a blast furnace or in an electric furnace.

Wire Rods

On page 100 of the August issue of the institute pamphlet (page 58 of revised Iron Trade Review booklet, third edition) under the heading of wire rods add the following:

"Bundling for export—$1.00 per gross ton additional."

Warehouse Trade

After the second paragraph under the heading "Rulings on Differentials" of the committee's announcement of Sept. 26, 1918, defining the basis of extras and differentials that govern sales from warehouse, add the following:

"Machine cutting is not considered an inherent part of warehouse trade and where machine cutting is done by warehouse it is considered an accommodation to the purchaser and a reasonable charge may be made therefor, such charge to show as a separate item on invoices."

Implement Men to Meet

The farm wagon department of the National Implement and Vehicle association will hold its annual meeting in the Hotel LaSalle, Chicago, Nov. 19 and 20 and the tractor and threshing machine department will hold its annual session at the Auditorium hotel Nov. 21 and 22. The ensilage machinery department will meet at the Hotel LaSalle Nov. 19.

Call Makers to Capital

War Industries Board to Discuss Problems Arising From Cancellations and General Situation With Committee Representing Institute

NEW YORK, Nov. 12.—The committee on steel of the American Iron and Steel institute will go to Washington Wednesday to discuss with the war industries board the general steel situation and problems arising from cancellations of contracts. The committee will go to Washington at the request of Steel Director J. Leonard Replogle, and the conference is to take place at the headquarters of the board.

This is the first instance where the government has called on industrial leaders for advice in the great reconstruction task ahead of the nation. Prices are not to be considered now. The board had reserved Dec. 11 for a conference on prices which were to affect the first quarter of next year had the war continued, but it now may be utilized to determine a possible new policy as regards costs, mainly of labor and raw materials.

The government has given no intimation as to its possible price policy.

Cancellations

Of Large War Orders Reported—Navy to Make Many Changes

Washington, Nov. 13. (By wire.)—An unconfirmed rumor, but from apparently reliable source, is in circulation that the war industries board has approved contract cancellations involving 13,000,000 tons of steel. If true, this probably includes a heavy tonnage of shell steel and other war materials for delivery in 1919.

Washington, Nov. 12.—Plans for readjusting and cancelling contracts made by the numerous government departments for purposes of war already have progressed further than it is generally conceded officially. While only the preliminary stage has been taken up, and vast problems remain to be solved, it is reported that some large contracts already have been cancelled and that other cancellations undoubtedly will follow at once.

The biggest domestic cancellations of war contracts necessarily will be those made by the army. The navy department will not make any material reduction in its requirements in connection with the construction of ships, although the character of building will be different than it would be if the war had continued. However, both the navy and war departments already have ordered heavy cuts in work of constructing plants, houses, etc.

It is reported that some important cancellations of war contracts for steel requirements already have been made. Among them is said to be an order which was placed with a new plant in the middle west for $6,000,000 worth of forgings. Other large forging contracts either have been cancelled or will be soon. The same applies to shell steel requirements generally.

Gary Calls For Confidence

(*Concluded from Page* 1112)

be offered during the next few months or years, none can predict accurately but there are reasons to suppose it will be large. The government will continue to be a large purchaser at reasonable prices for the finishing of incompleted projects and others contemplated for the changes which will be incidental to a peace basis. In this connection it will be observed that the war industries board and other governmental departments already are considering methods for assisting in the readjustment of business without serious disturbances or injury to general conditions.

"Besides, there has been in all lines of trade an accumulation of orders which to a large degree at least, will be placed so soon as the supply may justify. And in order to refill empty warehouses throughout the country, large quantities of finished materials will be required. Moreover, in non-producing countries it has been impossible to supply their necessities on account of the war requirements, and these will commence to buy as soon as it is practicable, so that a large increase in operations may be expected. Extensions and new constructions which have been necessarily postponed for lack of material will be taken up.

"And with all this is connected the thought that as a net result of the war, the volume of cash and cash resources has been increased in a marked degree and will be expended for purposes of expansion and development in this rich and growing country. The circulation of money is considerably larger than it was at the beginning of the war.

"As a general proposition it is still true that the optimist who keeps within the limits of cash or stable cash resources will succeed. For the long future we have reason to believe that the country will be more progressive and more prosperous than ever before. It remains for all who have been permitted to survive the horrors of war to enter upon the new era with a united and fraternal spirit, and a fixed purpose to profit by the experiences of the past and to aid in the establishment of a permanent basis of peace and prosperity."

The Non-Ferrous Metals

Copper Lead Spelter Tin

	*Copper	†Spot Straits, tin	‡Lead, New York basis	Spelter St. Louis basis	§Aluminum	Spot antimony
Nov. 6	26.00	.....	8.05	8.60	33.00	10.25
Nov. 7	26.00	.....	8.05	8.50	33.00	9.75
Nov. 8	26.00	.....	8.05	8.50	33.00	9.50
Nov. 11	26.00	.....	8.05	8.50	33.00	9.00
Nov. 12	26.00	.....	8.05	8.35	33.00	9.00

*Government fixed maximum price for prime lake, electrolytic and casting copper, in ingots, pigs, slabs, etc., less than carloads, 27.30c.

†No spot Straits tin offering.

‡Price agreed to by leading interest and independents.

§Government fixed price for 98 to 99 per cent ingot aluminum in 50-ton lots; lots 15 to 50 tons, 33.10c; one to 15 tons, 33.20c.

NEW YORK, Nov. 12.—Little business has been done in the metal markets the past week, in expectation of the armistice which was signed Monday. Business was wholly suspended on Thursday as a result of the premature celebration growing out of a false report, and again suspended on Monday. Producers of metals are generally cheerful over the prospects for the longer future, although there is some pessimism evident regarding the immediate future. Producers of lead and copper are particularly cheerful. Spelter is holding steady; although inquiry is lacking, producers are not pressing sales. Antimony alone has reflected through a drastic decline, the imminence of the end of war business.

Prior to this week no war order for metals had been cancelled, excepting that the Italian government had asked that some shipments be suspended, following the signing of the armistice with Italy. Today it was rumored a number of consumers were trying to cancel on account of the government advising them to stop work on products.

The copper producers are being pressed urgently for deliveries, with orders showing no abatement. The October refinery production was considerably smaller than September, but the bad conditions caused by the influenza epidemic are improving. The present fixed price remains effective until Dec. 31.

The internal tin control seems to be approaching smooth running order, but already the question of its dissolution, with the passing of the war emergency, is arising. This control has become an almost perfect example of buying monopoly, the control being exercised by centralizing the buying through one agent in Singapore, another in Batavia, and another in Australia. Only these agents may receive licenses for importation of tin into the United States and Great Britain. The nominal price of spot Banca tin in New York now is about 75c.

Reports on World's Ore Resources

British Department of Industrial Research Estimates United States' Deposits Contain 74,566,000,000 Tons—Finds it Cheaper for England to Import Ore Than Mine it—Germany's Resources Revealed

A REVISED and enlarged report on the world's resources in iron and other metalliferous ores used in the iron and steel industry has been issued by the British department of scientific and industrial research. This adds to the former report more complete information relating to the resources of Germany and her allies and data relating to the production of manganese, cobalt, nickel and tungsten.

The report was prepared by G. C. Lloyd, secretary of the British Iron and Steel institute, to assist the committee on metallurgy of the department of scientific and industrial research in its survey of the field for research in connection with iron and steel. It presents in succinct form the best knowledge on the subject gathered from various sources and revised by Dr. Henry Louis, professor of mining and surveying in the University of Durham, and, in so far as the sections dealing with Canada are concerned, by Major Brock, director of the geological survey in Canada. It is divided into sections dealing with the iron ore resources of the United Kingdom and those in other counties and ores of the principal metals other than iron important in the iron and steel industry.

Germany's Resources Revealed

The new sections dealing with the resources of Germany and Austria-Hungary are considered highly important at this time as affecting the commercial interests of other nations. A summary of these sections shows that an authoritative estimate of the total amount of iron ore in sight in Germany is 2,840,000,000 tons, divided as follows: Lahn and Dill region, 166,000,000; Siegerland, 100,3000,000; Ilsede and Salzgitter, 248,000,000; Lorraine-Luxemburg, 2,130,000,000; other districts, 195,700,000. It is also estimated that there are 1,067,700,000 tons in reserve, this estimate being made up of 500,000,000 tons in Lorraine-Luxemburg, 92,000,000 in the Lahn and Dill region and the remainder scattered among the other districts.

Comparing the resources in the Lorraine-Luxemburg district, the report quotes a German authority as estimating the total amount of iron ore in French Lorraine as 3,100,000,000 tons, that in German Lorraine as 1,841,000,000 tons and that in Luxemburg as 250,000,000, a total of 5,191,000,000 tons, with the resources in Germany considerably less than on the French side of the frontier.

The total production of iron ore in Germany in 1913, the last year for which statistics are available, was 35,941,285 tons, including Luxemburg's output. The imports in the same year were over 14,000,000 tons.

Reviewing the resources of Germany the report says:

In Prussia the two basins of the Lahn and Dill rivers contain considerable quantities of red and brown hematite. The red hematite, which is the better ore, extends over the whole region between the Middle and Upper Devonian, as an even sedimentary deposit. Where the ore is calcareous, it changes to brown hematite and is of a somewhat lower grade. All the ores are rather high in silica.

Deposits In Dill and Lahn Basins

In the Dill basin the maximum depth of the deposits is 250 metres, and in the Lahn basin it is about 100 to 150 metres. The resources of the two basins are estimated at 135,000,000 tons and 62,000,000 tons, respectively. The Lahn basin contains besides a large number of smaller deposits of brown hematite in the form of pockets, filling out the irregular hollows and cavities in the limestone formations between Giessen and Limburg. The quantity of ore in these latter is estimated at 59,000,000 tons.

The iron ores of the Middle Devonian extend also into the hilly district known as the Kellerwald and Sauerland in Westphalia. The ores, however, vary greatly in character and composition, the iron ranging from 30 to 45 per cent and the lime from 5 to 30 per cent. On the other hand, they are cheaply worked, and lie at no great distance from the Westphalian blast furnaces. In 1910 they had been opened up in a few places only, and little was known about the probable resources. The estimated immediately available ore is put at 4,000,000 tons.

The Siegerland region, lying mostly in Southern Westphalia, is one of the most important in Germany as regards iron ore. The principal beds of iron carbonate are those between Siegen and Betzdorf. They occur in the Lower Devonian, and extend in workable quantity outside the Siegerland far beyond the central ore body, as far as the Rhine on the west, to Olpe and Eitorf in the north, to the edge of the Dill basin on the east, and to the hills of the Westerwald on the south. Innumerable lodes occur in the form of dykes. The ore is a carbonate ironstone of exceptional purity, high in manganese, changing everywhere at the outcrops to brown ironstone. An estimate places the immediately available reserves at 100,772,000 tons, and the further probable resources at 15,400,000 tons.

Other German Deposits

The district of Bentheim-Ochtrup-Ottenstein in the western part of province of Hanover and northwestern Westphalia contain about 15,000,000 tons of ore, while the resources of the Weser range and the Tentoburger forest, in northeastern Westphalia

World's Iron Ore Resources

Country	Resources, tons	Remarks
United States	4,578,000,000	Actual average-grade material.
United States	74,566,000,000	Possible tonnage, utilizing material comparative with English resources.
Great Britain	39,500,000,000	Total possible. Includes much low-grade ore.
Newfoundland	3,500,000,000	In one deposit.
Canada	.....	Not estimated—scattered and relatively small.
India	.....	Not estimated—said to be large.
South Africa	.....	Not estimated—little definite data.
Australia	113,000,000	Many other deposits known but not estimated.
Tasmania	25,000,000	
New Zealand	64,000,000	
Sweden	279,000,000	Many other areas unexplored.
Norway	180,000,000	Tonnage in two deposits. Many others extent unknown; concentrating propositions.
Russia	1,747,000,000	Includes fair proportion low-grade ore.
France	3,000,000,000	From one district now in German hands—no statement for other fields.
Spain	548,000,000	In addition, many unexplored areas.
Portugal	64,000,000	Many areas not estimated.
Italy	.....	Total not stated.
Elba	.....	Not estimated. Relatively small.
Sardinia	.....	Not estimated.
Greece	.....	Not estimated.
Tunis	40,000,000	Total for few deposits; others known; exploration poor beyond coast line.
Algiers	70,000,000	One deposit only; others known; exploration poor beyond coast line.
Morocco	20,000,000	Several deposits; others known; exploration poor beyond coast line.
Togoland	20,000,000	One deposit only.
China	100,000,000	One deposit only; little known.
Cuba	800,000,000	Mayari only; other areas.
Mexico	360,000,000	Durango only; other areas.
Chile	100,000,000	Tofo only; other areas.
Uruguay	.....	No estimates.
Venezuela	.....	No estimates.
Honduras	.....	No estimates.
Germany	2,840,000,000	
Austria	212,500,000	
Hungary	112,000,000	

and Hanover are summarized as follows:

	Immediately available	Probable
Carbonate and brown hematite of Huggel	3,800,000	3,500,000
Clay ironstones of Wittekind seam	10,000,000	20,000,000
Hematites of Weser range	6,700,000	.....
Iron-bearing limestone of Huggel and Klippen seam	.....	100,000,000

Mention also is made of the deposits in the Hartz mountain, the Thuringian forest, the lower Hessian basin, Baden, Bavaria and the Grand Duchy of Hesse.

The chief supplies of domestic iron ores used in the Austrian industry are drawn from the Nucitz deposits in Bohemia, the Erzberg in Styria and the Huttenberger Erzberg in Carinthia, most of the mines in Moravia apparently having ceased operations. The deposits in Bohemia and Styria in 1910 were estimated to contain 206,000,000 tons of ore containing from 25 to 45 per cent iron and 157,000,000 tons of the lower grade ankerite, containing from 15 to 25 per cent of iron. About 6,500,000 tons of ore are available in Carinthia with probable reserves amounting to 2,000,000 tons. The whole iron ore resources of Hungary are estimated at 112,000,000 tons with about 32,000,000 more tons unprofitable to work.

The report states that the total iron ore resources of Great Britain are 39,500,000,000 tons, but the largest proportion of the deposits cannot be worked at a profit under normal conditions, it being cheaper to import the ore. The principal ores are the high grade nonphosphorus ores of Cumberland and Lancashire, the stratified ore beds of Yorkshire, including the Cleveland ores, and the stratified iron ores of the secondary formations in Lincolnshire and Northamtonshire. Prof. Louis summarizes the resources in the United Kingdom as follows:

	Tons.
Stratified iron ores of the carboniferous formation (Staffordshire, Derbyshire, Yorkshire, Shropshire, Scotland, South Wales)	34,000,000,000
Stratified iron ores of the secondary formations (Cleveland, Northamptonshire, Lincolnshire, Leicestershire, Oxfordshire, Gloucestershire and Somerset)	5,000,000,000
All other iron ores (magnetite, red hematite, brown hematite and spathic ores in Cornwall, Devonshire, Cumberland, Lancashire, Forest of Dean, County Durham, and the aluminous ores of County Antrim, Ireland)	500,000,000
Total	39,500,000,000

The principal ore countries of the British dominions are stated to be Newfoundland, India and Australia, Newfoundland taking first rank by reason of one of the largest single iron-ore deposits in the world. The deposit exhibits a remarkable formation, the iron occurring in a succession of beds, one above the other, outcropping for a distance of 3 miles, only a few hundred yards from the edge of the cliff on the northern side of Belle Isle. A few more years of erosion might have caused the outcrops to disappear and 3,000,000,000 tons of ore would have been thus lost to the world. Claims have now been staked 12 miles out to sea.

While the ore from this deposit does not appear to have been in great demand in England, apparently due to the high percentage of silica in some of the shipments, one-third of the output before the war was purchased by Germany and the United States.

Progress Made in Australia

The deposits in India and Australia are not such as to enable either of those countries to become serious factors as iron exporters. Considerable progress has been made in the production of steel in Australia through plants established in the southern part of the country where there are large supplies of ore, such as Iron Monarch hill, which feeds the furnaces of the Broken Hill Propritary Co. containing 20,000,000 tons of the ore. The latter analyzes 52 to 54.5 per cent of iron. The resources at Iron Knob are stated to be 1,000,000 tons, the ore being of the same quality as that in Iron Monarch hill. Some of the largest iron deposits in the world are said to exist in Western Australia, the once-famous gold center, but accurate information is lacking.

The highest grade of one in British possessions is found in India where it averages 60 to 65 per cent, the deposits being situated in Orissa, in the Bengal presidency, and supplying the Tata Iron & Steel Co. As to Canada mention is made of the deposits at Torbrook and Nictau and the Londonderry areas, the ore aver-

Analyses of Typical Iron Ore

District	Iron	Silica	Phos.	S.	Alumina	Moisture	Mn
	Per Cent						
Cumberland, England	50.30	....	0.013	Trace	....	6.80	....
Cornwall, Bodmin, England	62.40	5.90	....	Trace	....	5.10	....
Haytor, Devon, England	46.00	0.28	0.080	....	....	....	0.350
Cleveland, Yorkshire, England	30.00	9.45	1.440	0.060	6.800	4.50	0.470
Ironstones of the Coal Measures, England	25.30	....	0.340	....	0.520	....	oxide 1.380
Lincolnshire, England	33.00	11.95	0.870	0.100	4.080	12.40	1.720
Rassay, Scotland	22.80	6.50	2.300	0.200	5.600	4.50	....
Belle Isle, Newfoundland	50.20	18.80	0.940	0.020	....	....	....
Nictaux, Nova Scotia, Canada	49.20	....	0.920	0.770	....	....	....
Londonderry, Nova Scotia, Can.	46.93	15.97	0.270	0.020	3.620	....	1.900
Bathurst, New Brunswick, Can.	47.40	17.00	0.840	0.200	....	....	2.500
Helen Mine, Ontario, Canada	53.60	....	....	....	....	....	....
Orissa, Bengal, India	61.85	1.64	0.050	0.020	....	....	....
Jubbulpore ores, India	60.70	7.50	0.080	0.020	....	....	....
Iron Monarch, South Australia	52.00	2.30	....	....	....	....	15.000
Cadia, New South Wales	55.70	7.45	0.300	0.050	1.490	8.72	0.540
Buchan, Victoria	69.20	1.03	0.040	....	....	....	....
Wilgi Mia, Western Australia	64.00	1.00	0.050	0.020	....	....	....
Beaconsfield, Tasmania	55.00	....	....	0.140	....	....	....
Parapara, New Zealand	51.00	9.56	0.350	0.210	3.360	11.84	0.650
Kirunavaara, Sweden	53.70	0.91	0.020	0.020	0.180	....	0.130
Gellivare, Sweden	51.00	0.07	0.040	0.030	0.440	....	0.080
Dannemora, Sweden	50.00	....	0.002	....	....	....	....
Arendal, Norway	43.24	13.60	0.010	0.030	3.200	....	1.660
Dunderland, Norway	35.00	....	0.300	....	....	....	....
Sydvaranger (concentrated)	68.00	2.50	0.030	....	....	....	....
	35.00	....	0.050	....	....	....	....
Krivoi Rog Basin, Russia (concen.)	70.00	....	0.020	....	....	....	....
	59.40	4.00	....	....	2.200	....	....
Nicolaiev, South Russia	66.00	3.00	0.010	0.020	....	....	0.070
Kertsch Peninsula, Russia	42.00	14.00	2.700	....	4.000	....	3.000
Czenstochow, Poland	50.00	5.00	3.000	0.100	12.000	....	10.000
Briey, France	40.00	4.00	1.700	....	....	....	....
St. Remy, Normandy	55.00	10.00	6.000	3.000	2.500	3.00	....
Biscay, Spain	54.50	5.91	0.030	0.030	0.210	4.60	0.860
Santander, Spain	55.00	5.00	0.040	0.080	....	....	0.700
Gergal, Spain	58.00	8.00	0.018	....	....	....	1.000
Murcia, Spain	56.00	8.00	0.150	....	....	....	0.300
Huelva, Spain	57.00	13.00	0.015	0.100	....	....	....
Gerona, Spain	52.00	9.00	0.200	0.030	....	....	2.000
San Thiago, Portugal	55.00	3.00	0.010	0.500	....	....	....
Cogne Mines, Italy	55.00	....	0.005	0.030	....	....	0.200
Rio Albano, Elba	65.20	4.30	0.030	....	0.600	....	....
Calamita, Elba	60.40	8.00	0.020	....	2.000	....	....
La Nurra, Sardinia	49.00	12.00	1.900	0.250	7.000	Ni	....
Grecian chromiferous ores	52.00	11.00	0.030	0.050	1.000	1.20	....
Seriphos, Greece	53.70	7.02	0.067	0.179	....	....	0.930
Djebel Djerissa, Tunis	60.00	2.50	0.025	....	....	....	3.000
Sebabna, Algiers	56.70	3.60	0.056	0.018	....	....	2.600
Dept. Algiers, Algeria	59.00	8.20	0.070	0.370	4.300	....	1.300
Djebel Cuenza, Constantine, Algeria	60.00	0.70	0.005	0.019	....	....	....
Netta ore, Morocco	63.62	....	0.023	0.060	....	....	....
Rogelia ore, Morocco	60.00	....	0.012	0.010	....	....	5.040
Togoland, West Africa	62.60	9.47	0.030	....	0.240	....	0.160
Ta-Yeh, China	62.00	5.00	0.250	0.120	2.000	....	0.400
Mayari, Cuba	50.30	2.70	....	....	7.130	12.90	....
Durango, Mexico	60.00	3.00	0.200	0.200	....	....	0.150
Monclova, Monterrey, Mexico	63.39	3.85	0.020	0.180	....	....	0.270
Minas Geraes, Brazil	69.65	0.24	0.125	....	....	0.38	....
Tofo, Chile	67.47	2.00	0.008	....	....	....	0.120
(a) Mesabi, Lake Superior	58.83	6.80	0.062	0.069	2.230	....	0.820
(a) Vermillion, Lake Superior	63.79	4.90	0.052	....	2.930	....	0.110
(a) Marquette, Lake Superior	57.05	10.16	0.105	....	2.180	....	....
(a) Menominee, Lake Superior	52.13	16.77	0.074	0.012	1.410	....	0.190
Cornwall, Pa.	64.90	3.89	0.014	0.071	0.234	....	0.158
Oriskany, Va.	37.00	33.26	1.312	0.014	5.260	1.90	0.610
Barton Hill, Va.	68.21	0.59	0.038	....	0.028	0.38	....
Birmingham, Alabama:							
From	45.00	25.00	0.250	0.500	2.000	0.50	....
To	32.00	2.00	1.500	Trace	5.000	3.00	....
Texan ores, Texas	46.40	14.47	0.172	0.083	8.170	....	....
Providence Mountain, Cal.	68.42	3.04	0.044	0.059	0.568	....	0.278

(a) All extracted from E. C. Eckel, "Iron Ores," 1914.

aging 49.20 per cent iron, 15.60 per cent insoluble, 0.922 per cent phosphorus and 0.77 per cent sulphur.

It is pointed out that distance does not prevent the exportation of ore on a commercial basis. In 1913 Great Britain imported iron ores from Spain, Greece, Algiers, Italy, Tunis, Morocco, Sweden, Norway, Newfoundland, Chile, France, Germany and Belgium; manganese from South Russia, India and Brazil; chrome from New Caledonia and Rhodesia; nickel from New Caledonia and Canada; molybdenite from Australia and Norway; tungsten from Burma and Queensland and vanadium from the United States.

France Attacked with Own Iron

In France, the Briey ore fields, containing more than 2,000,000,000 tons of ore and the fields in Meurthe-et-Moselle, containing 1,000,000,000 tons, are in the hands of the Germans, their possession being considered one of the important points which are to be discussed at the peace table. The output in other provinces of France, Normandy, Anjou and Brittany averaged 1,000,000 tons in recent years, the ores being hematites and carbonates averaging 46 to 50 per cent iron. Just prior to the war considerable ore was shipped from Soumont, France, to the Thyssen works in Westphalia, Germany using the iron to attack France.

Considerable space is devoted to the wonderful iron country of Spain and its importance in England, where it is classed as Vena, a compact, powdery ore of high quality; Campanil, the best known of the bessemer ores, the supply of which is now said to be nearly exhausted; Rubio, an ore mixed with clay and siliceous matter, the principal export ore, and Carbonato. The report states that the available resources of Biscay and Santander are 80,000,000 tons, the output being 6,000,000 annually. While this supply is failing, 226,000,000 tons of ore are estimated to be contained in the deposits near the Atlantic coast. and unknown quantities close to the Mediterranean coasts, these deposits not having been touched. Ten mines are in operation on the east side of the Island of Elba, the areas being operated under lease from the Italian government and the output of 500,000 tons annually being shipped to Italy.

Mention is made of the importance of the iron-ore deposits in Tunis, Morocco and Algiers, the mines and ore fields being located along the coast with access to transportation facilities. Vast deposits of both coal and iron are reported in China, the Han-Yen Ping Iron & Steel Co., having 100,000,000 tons of hematite averaging 60 to 62 per cent of iron.

American Resources Summarized

The iron ore resources of the United States are summarized and the essential features of the various regions, well known to American iron and steel men, are pointed out. Among the most important deposits mentioned are those in the Lake Superior region, the Adirondack region, the Oriskany ores of Virginia, the Alabama hematites, the Mississippi valley and Texas deposits and the Appalachian magnetite deposits.

Reference is made to the deposits at Durango Monterey, Las Vegas and Vera Cruz, Mex., but little definite information as to their scope and value is available. The deposit at Durango is estimated to contain 360,000,000 tons of ore, averaging 60 per cent.

The deposits in Cuba also are referred to briefly and analyses of the surface ore, middle layer and bottom layer of the Mayari deposit are presented. Owing to the proximity of these deposits to the American supply little importance is attached to them from the viewpoint of British manufactures.

Next to Brazil, Chile is mentioned as the most important iron country in South America, one of the largest areas in Chile being controlled by the Bethlehem Steel Works, one-third of the output being shipped to England and the rest to the United States. The deposits in Brazil are said to be the only rivals in the world to the supremacy of the Lake Superior region. The iron deposits are said to be much greater than estimates would indicate and considerable German capital is invested in them.

Deposits in Norway and Sweden

Despite the fact that Great Britain imported 489,000 tons of ore from Norway in 1913, Norway is not classified in the report as an iron-ore country, probably by reason of the fact that in comparison with the rich ores found in Sweden the deposits in Norway are not considered of particular value. The Swedish or fields in Lapland are estimated to contain 1,158,000,000 tons of ore, all of which contains more than 58 per cent of iron and much of which contains 68 per cent. The report classifies Gellivare ore at the mines as follows: Gellivare A, averaging 68 per cent iron and under 0.02 per cent phosphorus; Gellivare C, averaging 65 per cent of iron and under 0.06 per cent phosphorus, and Gellivare D, averaging 63 per cent of iron and under 1.10 per cent phosphorus, the sulphur content in all grades being less than 0.05 per cent. Attention is also called to the fact that there are many million tons of low phosphorus ores in southern and central Sweden, from which Swedish iron is mainly produced. Twenty-three concentration plants, treating more than 600,000 tons of ore annually, are in operation.

New Caledonia is said to lead in the production of chromite and the other chrome-producing countries in the order of their importance are Rhodesia, Russia, Canada, Greece, India, the United States, Japan and Australia. The Rhodesian areas are 560 miles inland from the shipping port, Beira, Portuguese, Africa. Production there increased from 12,000 tons in 1908 to more than 63,000 tons in 1913, the United States importing 32,500 tons in 1912. Notwithstanding the distance the ore must be transported, the Rhodesian interests in conjunction with a combination of interests in New Caledonia dominate the chrome situation.

Two-thirds of the world's production is marketed by the company La Chrome, which controls the New Caledonia areas, in combination with the Rhodesian company. The largest mine in New Caledonia is known as the Tiebaghi, in the north of the island, yielding chrome grading 67 per cent chromic oxide. The chrome industry has been developing in California and Quebec due to the difficulty encountered in importing the ore.

The world's largest chrome deposits are said to be at Broussa, Asiatic Turkey, where there is an estimated tonnage of 12,000,000, the ore averaging 51 to 55 per cent. The Turkish government is held responsible for the fact that these deposits do not control the chrome markets of the world.

The total production of manganese ores in the British empire in 1916 is reported to have been 639,166 metric tons, the largest proportion of the output, 631,083 tons, coming from India. The largest production outside the British empire was in Brazil, 503,130 tons. The production in the United States was 27,000 tons.

The production of nickel ore and matte in 1916 is given as follows: Canada, ore mined, 1,566,333 short tons; ore smelted, 1,521,689; bessemer matte, 80,010; nickel content of matte, 41,298; New Caledonia, ore exported,30,679 metric tons; matte, 4935; Norway, metallic nickel, 800 metric tons.

The production of tungsten concentrates in 1916 is given as follows: British empire, 5381 tons; United States, 2937 (first six months only); Spain, 455 and Siam 430.

Employs Oxy-Acetylene in Removing Salamander

No. 1 furnace of the McKinney Steel Co., Cleveland, was blown out recently for relining. Heretofore this stack, rated at 350 tons, was blown with eight tuyeres but on lighting the furnace again as is contemplated in a month, the blast will be supplied through 10 tuyeres. The diameter of the hearth is being increased one foot and other sections of the stack in proportion. When access was gained to the inside of the furnace approximately a 2-foot salamander was encountered in the bottom of the hearth. A novel method is being used for removing this accumulation. Instead of drilling holes for dynamite with a diamond bit with the aid of a sledge hammer or inserted in the jaws of an air drill, oxy-hydrogen is being employed successfully. As the cutting action of these gases continues, the pressure of the latter blows the molten material from the hole. It is found that one tank of oxygen is sufficient to sink a hole four feet deep. By means of this method the cost of removing a salamander as well as the time and labor required is greatly reduced.

In an effort to conserve man power, material and fuel, the Walworth Mfg. Co., Boston, has decided to eliminate polishing on its stillson wrenches.

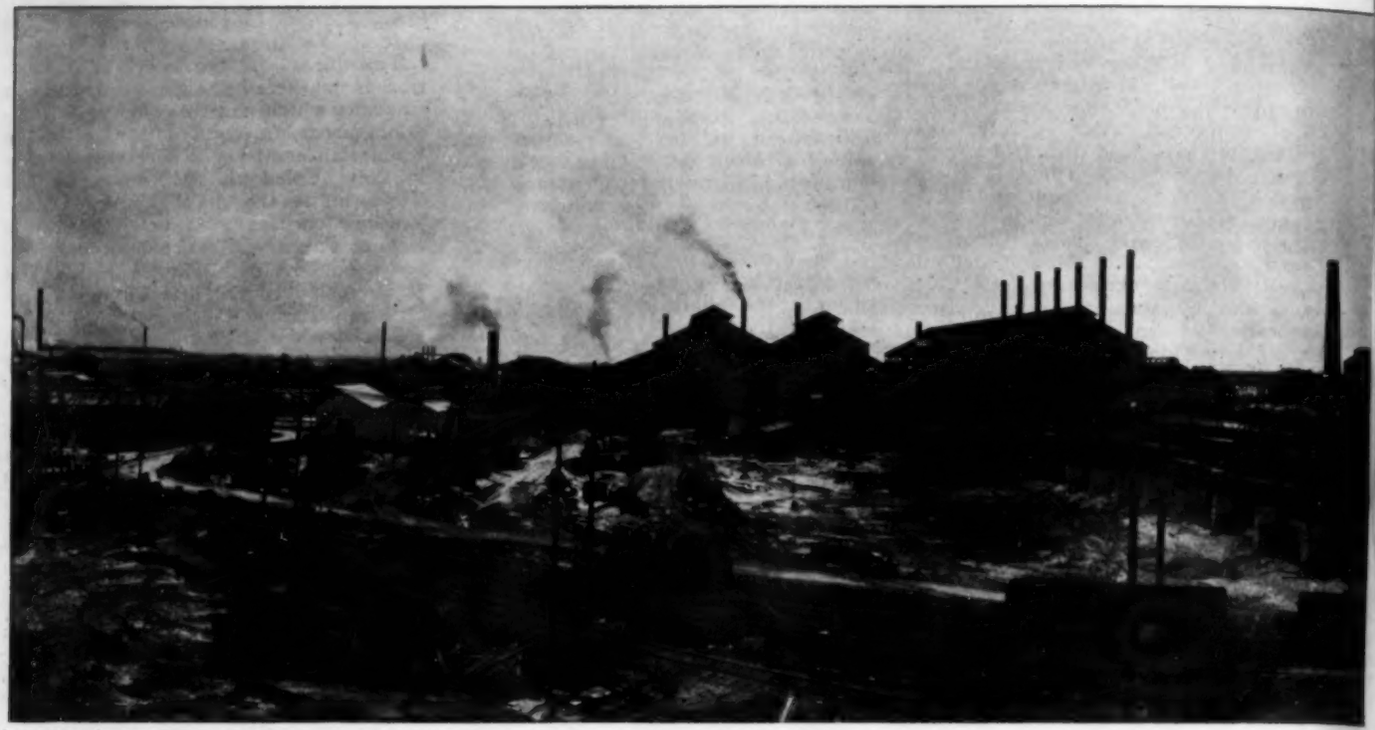


Fig. 1—Panorama of Broken Hill Proprietary Co.'s plant at Port Waratah, near the city of Newcastle.

Australian Iron and Steel Plant

AMERICAN methods in the design and construction of iron and steel plants are to be found in nearly every country on the globe. This is particularly true in Canada, India, Spain and England where American engineers either have played a large part in the erection of these plants or have been retained in a consulting capacity. A recent example of the adoption of American methods is found at the plant of the Broken Hill Proprietary Co., Newcastle, N. S. W., which was designed and erected under the supervision of American engineers. Part of the equipment of the works was built in this country.

The works are so situated that they are advantageously placed for the unloading and loading of ore and other material, and for the despatch of the finished products of the works. Standing out boldly at what is almost a point formed by a sweep of the river Hunter, the great masses representing the blast furnace and stoves, the ore conveyors, the blooming and rolling mills, and the large bank of coke ovens to the west are clearly visible from any port of the city and suburbs and to everyone entering the harbor.

The first installment of plant from America arrived in Newcastle on Jan. 3, 1914. In the meantime the channel leading up to the works was deepened by the government so as to take vessels up to 25 feet draught, and the sand from the dredging served to fill in the low-lying ground. The contractors began work on the foundations for the blast furnace and stoves, while at the same time work was commenced upon the coal bin, which holds 5500 tons, and from which the coal can be loaded into vessels for shipment to Port Pirie and Broken Hill at the rate of 400 tons per hour. The putting in of the foundations for the furnace and stoves was by no means a light work. A large number of piles had to be driven to secure a stable bottom for the concrete beds, which are built up to a height of about 12 feet from the level of the ground. The furnaces and stoves stand at a short distance from the water, and a vessel drawing alongside the 1300-foot wharf opposite them can be unloaded and the ore carried direct to the blast furnace receiving bins, or to the stock pile. This is done by means of two mechanically-operated ore bridges.

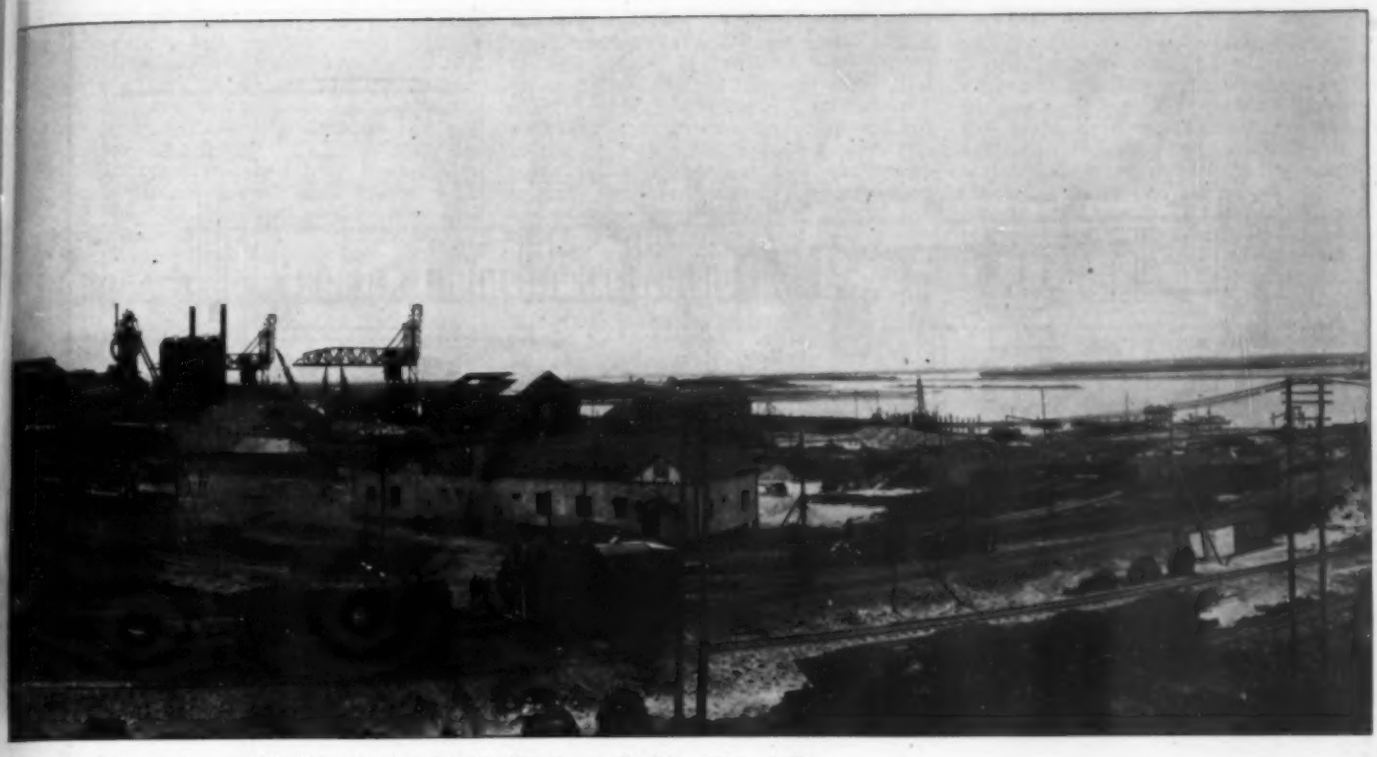
Late Type Blast Furnace

The furnace has a capacity of 500 tons pig iron per day. It varies from the ordinary water-jacket type of blast furnace, in that a stream of water is constantly running down the exterior, thus serving the double purpose of keeping the lower part of the furnace, near the tuyeres, at a moderate temperature externally, and so preserving the inner walls from erosion and preventing the radiation of heat. The furnace is provided with a Baker-Newman rotary distributor, which spreads the lumps and fines forming the charge automatically and equally about the receiving bell of the furnace. This bell is so fitted that it closes the mouth of the furnace, and when it is lowered the charge slides off into the furnace. In this way provision is made for the regular and economic feeding of the furnace, and there is practically no loss of thermal power. The enormous structure is kept charged to within 5 feet of the top all the time. The sealing of the furnace when the main bell is lowered is effected by means of a gas bell, and thus the escape of gas is prevented.

The furnace is 90 feet high, which is generally recognized in blast furnace practice to be a sufficient height for obtaining the most economical and satisfactory results; for at this height the charge does not, as in the case of taller furnaces, become jammed in the bottom.

The waste gas from the top of the furnace passes through a dust catcher, and thence through a Steece and Ford washer, which removes 95 per cent of the total amount of suspended matter from the gas. The washed gas is then distributed through suitable mains to four hot-blast stoves of the improved Cowper type. These stoves are each 21 feet in diameter and 90 feet high. The blast for the furnace is heated to an average temperature of 1300 degrees Fahr.

The stoves have two distinct phases. At one time they are "on gas," during which part of the waste gas from the furnace is burnt within the stoves, and this serves to heat quickly the great surface of brickwork which is provided for that purpose within the stove. The other phase is when the stove is "on wind," during which the blast is heated by passing it over the surfaces which have been thus superheated. The stoves are really heat-filters or heat-traps for impounding the heat developed by the combustion of the furnace gas, and later returning it to



N. S. W. The ground upon which this plant is constructed formerly was low-lying swampy land

Erected on American Principles

the blast. Not all of the gas from the furnace is used up in this way, and the surplus is conducted through an underground flue to the Babcock and Wilcox boilers which furnish the power for operating the blowing engines.

Three blowing engines are installed—two high-pressure and one low-pressure—two being required at one time to operate the furnace. No less than 35,000 cubic feet of air per minute is required to keep the furnace running, and this is forced by the blowing engines through one of the stoves into the blast furnace. Surface condensers are provided on each of the blowing engines.

The tapping of the blast furnace is carried out every four hours. The quantity of metal at each cast varies from 60 to 80 tons. As indicating more clearly the difference between this class of furnace and the older class, it may be mentioned that nine men on the blast furnace at the Newcastle steel works can do the same amount of work as can be done by 26 men on a less up-to-date furnace, and the Broken Hill Co.'s furnace will, in 24 hours, turn out more than twice the quantity of pig iron.

A second blast furnace, with a capacity of 500 tons pig iron per day, together with necessary bins, is now being constructed, and will shortly be completed. A smaller furnace of 100 tons per day capacity is now in commission, producing pig iron for use of iron founders. Included in this department is a direct metal foundry where heavy castings, principally ingot molds, are turned out; the essential feature in these molds being weight rather than quality of material. The yearly consumption of these molds is fairly heavy.

From the blast furnace the ladles of iron are taken to the open-hearth department close by. This department now consists of seven 65-ton basic open-hearth furnaces of the stationary type. As the works expand the number of steel furnaces will be increased, and there is room on the property for the building of 14, if found necessary to do so. Probably this will be done, because the system found most advantageous in America, when several blast furnaces are running, is to have a nest of 14 steel furnaces. Although only one blast furnace is in operation, the plant has been laid out so as to cope with the output of four or even six furnaces. Two electrically-operated 100-ton cranes traverse the length of the open-hearth furnace building on the charging side.

Composition of Charge

A single charge of one of the steel furnaces consists of 40,000 pounds of steel scrap, 80,000 pounds of pig iron, 20,000 pounds of limestone, and 12,000 pounds of ore. The containers holding the charges are placed on trucks and pushed up an inclined railway by a locomotive from the ground level to the charging floor. The process adopted in connection with the making of steel is the "direct metal" process, which has come into use only during the last few years. Under this system the molten metal is conveyed from the blast furnace to a steel mixer with a capacity of 1000 tons, from whence it is taken into the furnace without being allowed to cool, thus ensuring a continuous supply of hot metal of even analysis for the open hearths. From the mixer the molten metal is poured into a 40-ton ladle and conveyed to the furnace by the overhead crane. The mixer when full has a total capacity of 1200 to 1300 tons. The other portions of the charge are taken up in charge boxes and discharged into the furnace by means of a low-type electrically-driven traveling charging machine, two of which serve the furnaces.

In due course the heat of the furnace increases to about 3000 degrees Fahr., and the whole of the mass is surging and spouting under the high thermal influence. The steel is tapped from the back of the furnace, and is run off into 75-ton ladles. A certain proportion of ferromanganese and ferrosilicon is tossed into the ladle, and this mixes with the steel, for the purposes of hardening and deoxidizing the metal.

The steel having been run off from the furnace, the ladle is lifted by means of a 100-ton traveling crane, and the metal poured into 3-ton ingot molds, two molds standing on one low, stout truck. When about half the quantity of steel in the ladle has been run into the ingot molds—a sample is taken, and this is tested in the laboratory, to prove the quality of the steel in that particular cast.

Iron not taken direct to the open-hearth department is dealt with in a Heyl and Patterson two-strand pig-casting machine. This machine is used to deal with any pig iron not required in the steel furnaces, and particularly with that which will be made while the open-hearth furnaces are closed down for any purpose. The

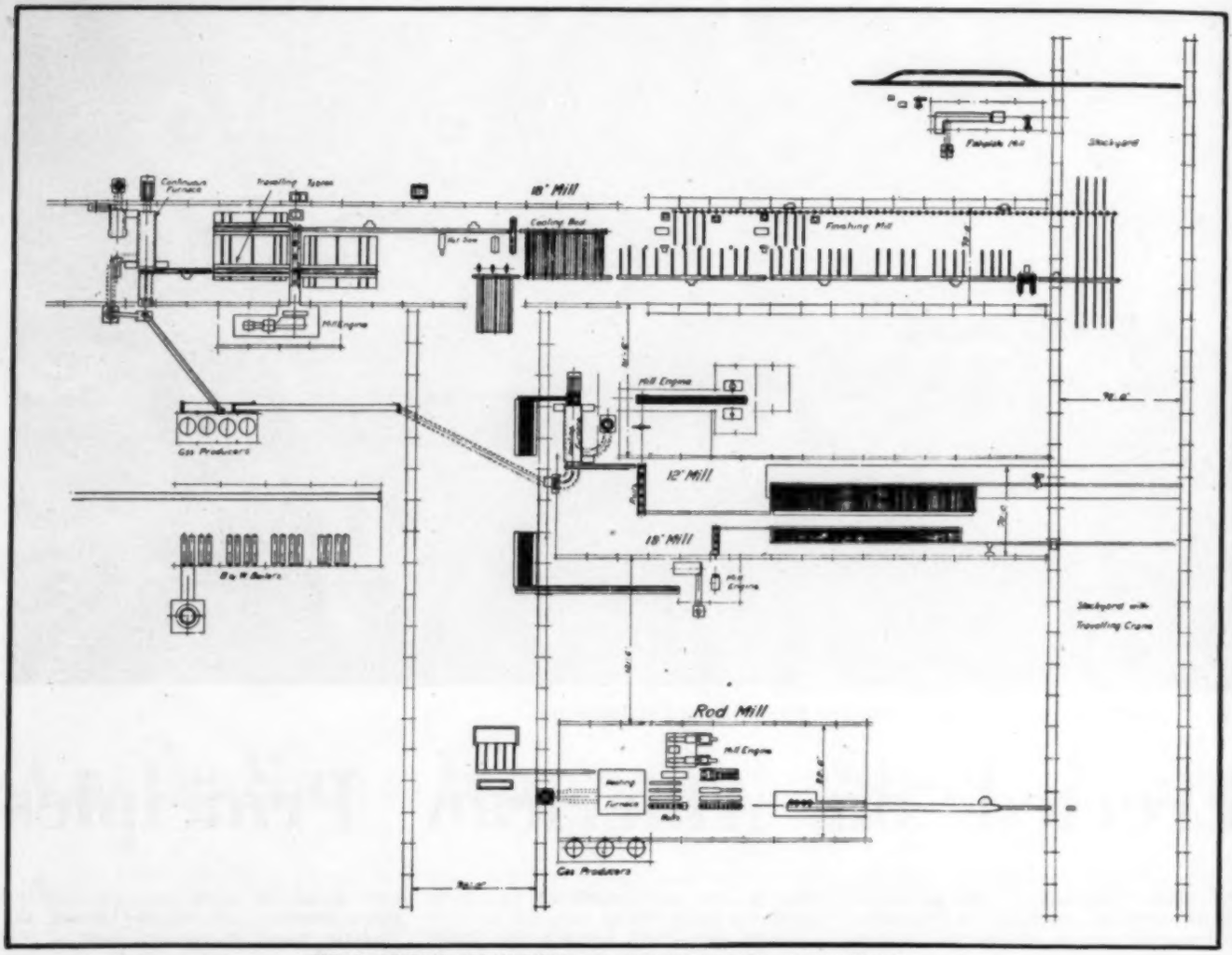


FIG. 2—GENERAL ARRANGEMENT OF THE VARIOUS MILL INSTALLATIONS.

FIG. 3—OPEN-HEARTH CHARGING FLOOR IS SERVED BY AN ELECTRICALLY-DRIVEN CRANE. FURNACE DOORS ARE OPERATED HYDRAULICALLY

pigs are carried along in the molds until they are cooled under sprays of water, and then they are tipped out as the belt of molds turns to come back under the staging to the point of filling. From the end of the pig casting machine the pigs are delivered by a 10-ton gantry crane, having a 65-foot span. This crane, with the use of magnets, loads the pig iron and scrap into the charge boxes, which are in turn discharged into the steel furnaces by means of a horizontal type electrically-driven charging machine.

Blooming and Rolling Mills

When the ingot molds at the open hearths are filled and the metal has cooled down somewhat they are switched, with the trucks, into the soaking pit at the northern end of the building—about 300 yards long—which houses the blooming and rolling mills. Here an electrically-driven stripping machine of 150 tons capacity removes the mold from the ingot, and a stiff-leg charging crane lifts and places the red hot ingots in the soaking pits. Each of the latter has four holes, each hole taking six ingots. The object of placing the ingots in the soaking pits is to bring them to a uniform temperature throughout; otherwise they would be too cold on the outside and too hot within for the purposes of blooming and rolling. When they have been brought to the desired temperature the ingots are removed by the crane, and are placed on the approach table to the blooming mill. This mill and the engine for driving it were built by McIntosh, Hemphill & Co., Pittsburgh. It is a 35-inch geared mill, of massive construction, and it is driven by a twin reversing engine of high power, with cylinders 42 x 60 inches. Some idea of the size and power of the engine may be had by the fact that there are seven pieces of metal in it, each weighing 42 tons, besides many smaller parts.

Breaking Down the Ingot

When the ingot goes on to the approach table it is about 20 inches square and about 5 feet long. In what is technically known as 15 passes this block of steel is reduced to a bloom four or six inches square. Passing along to the shearing machine, the bloom is cropped at both ends, and then cut into billets of any length that may be required, so as to be ready for the rolling mill. The first billet is then run into the 28-inch rail mill on electrically driven traveling tables. The other billets are carried mechanically to a reheating furnace, close to the shearing machine, where they are kept at the right temperature until their turn comes to pass on to the rail mills. The billet is converted into the completed rail in nine passes, the operation taking only about 90 seconds.

It will be readily understood that the mill which carries out the work of rolling steel blocks into rails with such expedition is of substantial construction. It was turned out from the works of the United Engineering & Foundry Co., Pittsburgh. It is fed by two large traveling tables, and is driven by a twin horizontal engine, with cylinders 42 x 60 inches. This engine is of the reversible type, and has no flywheel. The mill is of the type known as a 3-high mill, which is the type of rolling mill most favored by United States steel rail makers. The engine is accordingly operated only in one direction, except in the case of trouble arising with the piece which is being rolled, when the engine can be immediately reversed and the piece withdrawn from the rolls.

After leaving the rail mill the rail is carried under a circular saw of the sliding type, which cuts it into the required lengths. The rail is then taken to the hot-beds, where it is allowed to cool. Afterwards it is removed from the hot bed and delivered to the finishing mill, where it is straightened, ended if necessary, and drilled ready for use. Special soaking pits and beds are provided for

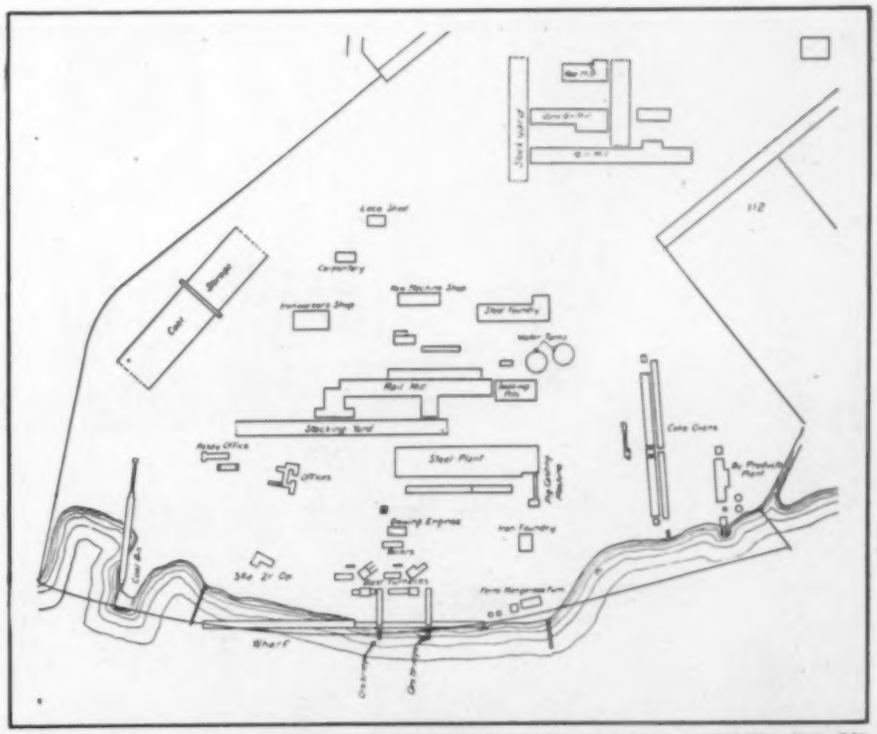


FIG. 4—GROUND PLAN OF WORKS. SITE AFFORDS EXCELLENT SHIPPING FACILITIES FOR DISPATCHING THE FINISHED MATERIAL

treating small billets, and for rolling and handling plates special gear is available.

The blooming and rail mills are of sufficient capacity and power to deal with an output up to 1000 tons of finished rails per day. The plant in the finishing mill department is, in its turn, sufficient to handle the entire output of the open-hearth, and to make of it the completed rails.

Merchant Mills

Steel for the 18-inch mill is first rolled in the blooming mill to billets of the required size. The billets are then fed into a gas-fired furnace, reheated, and pushed through on to the conveying rolls, and thence fed into the mill. The mill is a 3-high type, continuous running, and served by four tilting tables, which permit of rolling two bars at the same time. The finished product consists of light rails, fish-plate bars, light structural steel, and billets for the smaller merchant mills. Finishing plant here is similar to that installed at the 28-inch mill. In the fish-plate finishing plant adjoining this mill the bars, 30 feet in length, are sheared to plate lengths, and then fed into a horizontal heating furnace. They are pushed through the furnace, being heated in transit, and then fed to a punching machine, where holes are punched. In another machine holes are notched to take dog-spikes. After straightening, cooling, and inspection, the finished plates are passed through an oiling machine and tied into bundles for despatch.

Adjoining Bar Mills

The 12 and 8-inch mills are installed in adjoining building. The process of reheating the billets and rolling is similar to that of the 18-inch mill. In these mills bars and flats are rolled, the smallest product being ⅜-inch round bars. Power is obtained from two Belliss and Morcom high-speed engines.

This department constitutes the latest addition to the works, and the work of construction and the erection of machinery is proceeding. It adjoins the 12 and 8-inch merchant mills. The material used in the superstructure, comprising steel channels, angles, etc., are the company's product. The mill is a continuous rod mill, consisting of 16 pairs of rolls. A gas-fired furnace will reheat the billets required for rolling. The dimension of these billets will be 1¼ x 1¼ inches and from the furnace they will be passed through the 16 pairs of rolls, reducing the material down to .220 of one inch—No. 5 size rod. Two automatic reels then coil up this rod, the coils measuring when full 34 inches inside diameter, and about 44 inches outside. The coil of rod is then discharged into an enclosed conveyor, which is approximately 150 feet long, and at the end of this conveyor the coils are discharged on to trucks. Each coil will weigh 300

pounds. Two Morgan producers will supply gas to the furnace. A 10-ton crane will serve the mill building. The mill, which was designed by C. S. Cooper, of U. S. A., will be driven by a high-pressure engine.

Steel and Iron Foundry

The extensive additions made to the works from time to time, and the extensions in hand, together with ordinary repairs and upkeep, led to the company establishing an iron and steel foundry. This has been enlarged, and now constitutes an important unit in the establishment. In this department steel castings of high quality are turned out, the weekly output being between 80 and 100 tons. In addition to the company's own requirements, outside orders for castings too heavy for other manufacturers are filled. The regular work consists of castings ranging from 2 pounds to 20 tons in weight, and includes ingots for forging into shaftings, large castings for blast furnaces, and truck wheels. Recently two steel castings were made at the open-hearth furnace for plant extension, each weighing 40 tons, for which 55 tons of metal had to be poured, while preparations are in hand for casting a rope wheel 19 feet in diameter. The equipment includes an acid open-hearth steel furnace of 25 tons capacity, tar being used as fuel, and an electrically driven overhead crane.

Coke Oven Equipment

A large quantity of coke is required for the blast furnace department, and this is made on the ground. Coal for the ovens is delivered to the crushing and screening plant, which is equipped with mechanical handling appliances. The ovens are the Semet-Solvay recuperative by-product type. The output at present amounts to 450 tons of coke per day. The recovery of sulphate of ammonia per ton of coal is 22 pounds, of tar 7½ gallons, and of gas 12,800 cubic feet of which about 5000 is available for power purposes after furnace requirements are met. The original plant consisted of 66 ovens, but has been increased to 99; construction work on an additional 33 is now in hand. The stack for the ovens is built of steel; it is 160 feet high, and has not a single stay. A second stack of similar construction is in course of erection. The gas from the ovens is passed through condensers, then taken to the by-product house, where tar and ammonia are extracted. The two saturators where the ammonia content is separated have a capacity of about 8,000,000 cubic feet of gas per day each. There are two saturators in operation, and a third is being installed. The ammonia is subsequently used in the manufacture of sulphate of ammonia for agricultural purposes. A portion of the gas obtained from the coke is used for heating the ovens in the production of more coke, while the remaining portion is used in the works for heating furnaces and various other purposes. The tar is also being used as a fuel in some of the furnaces.

A new inclined bench has been tried, and proved successful. This provides for the coke after discharge from the oven through a Darby quencher, falling down the inclined bench direct into trucks, the breeze falling through slots on to a belt and then into a bin. From the trucks the coke is tipped directly to the skip-car at the blast furnace, and the ore and limestone are collected by means of a travelling hopper, electrically operated, which weighs the charge as it comes from the blast furnace stock bins and conveys it to the skip-car. This single skip-car then runs up an incline to the point where the charge is dumped into the blast furnace.

The large quantity of cooling water required in connection with the works is obtained by means of centrifugal pumps, supplying two tanks 60 feet high, and of over 100,000 gallons capacity each. These tanks supply, under pressure, the cooling water needed for the blast furnace and coke ovens. The power house is equipped with 1000 kilowatt steam turbine set and three 500 kilowatt generators, the latter being driven by a combined vertical high-speed engine of Bellis-Morcom construction.

Lighting Equipment

For lighting purposes a 250 kilowatt direct-current generator, driven by a Bellis-Morcom high-speed engine. Energy for the power house and rail mill is furnished by five batteries of Babcock and Wilcox water-tube boilers of 5155 square feet heating surface. In the plan of the works provision is made for the extension of boiler plant and also of the power house. The boilers are fitted with induced draft fans and chain-grate stokers, the ash being removed through an underground tunnel by means of steel hopper cars running on a narrow gage track. Water for boiler purposes is taken from two reinforced dams, each with a holding capacity of 500,000 gallons. The water is softened by running over aluminum plates as it passes into the dams.

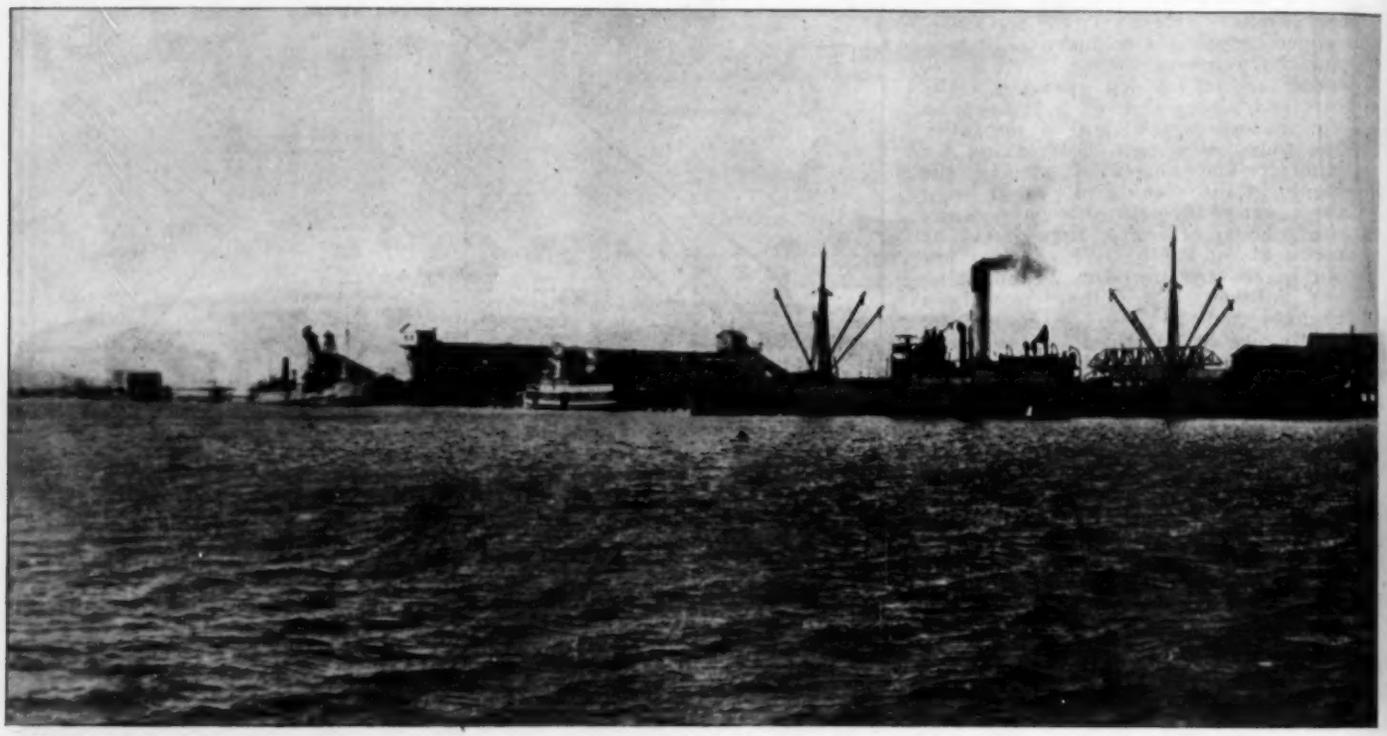


FIG. 5—NEWCASTLE IRON AND STEEL WORKS FROM WATER FRONT. ORE FROM THE BOATS WHICH DOCK ALONGSIDE THE 1300-FOOT WHARF OPPOSITE

Product of Works

While the chief industry of the works will be the turning out of steel rails—80-pound rails principally—and the rolling mill has been built primarily for that purpose, it is at the same time so constructed that it is capable of rolling structural steel of any size or shape, from 3 x 3-inch angles up to heavy 24-inch beams. At

present the largest beam rolled is 15 x 5 inches.

The works have been laid out with an eye to the future, and so in every department provision has been made for additions and extensions. The handling of material in iron and steel works is always a big proposition, and the management has made a special study of this side of the subject. The latest mechanical appliances known in steel making have been introduced, so as to produce the finished article at the lowest possible price. The ore is carried to the receiving bins of the blast furnaces by means of electrically operated grab buckets. From these receiving bins the ore, with the other material forming the charge, is delivered by machinery into the furnace. The handling of the pig iron until it is turned into steel, and then until the latter deposits are among the most notable in the world, and there are millions of tons of high-grade ore in sight. It is estimated on assay to carry 66 to 68 per cent of metallic iron. It is believed there is now nothing equal to the mine or its ore in America. A feature of special interest is that the ore is practically free from phosphorus and sulphur. Crushing machinery and special ore bins have been provided at the place of shipment; electrically operated belt conveyors take the crushed material on a jetty to deep water, and the seagoing vessel can be completely loaded with ore in a few hours; loading, so far, has been at the rate of about 800 to 1000 tons per hour. At Newcastle the unloading of several thousand tons of ore takes only two days, and the ship can then be loaded with coal in one day for the return trip. This back loading will be a big factor in keeping down the expense of bringing the ore to the works for treatment.

The supply of limestone is, like that of iron ore, unlimited. The company has fine deposits at Melrose, Tasmania; and on the Manning river, about 100 miles north of Newcastle.

Coal Bridge

For regulating the fuel supply the company has installed a coal stacking bridge, similar in design to the ore bridges used in handling the ore at the blast furnaces. The coal hoppers as they arrive at the works from the collieries are lifted off their frames and emptied on to the pile, particular classes of coal being stored together. When required the coal is taken from the pile by a 5-ton grab bridge and loaded into the company's hoppers for transportation to point desired. By this means it is possible to handle expeditiously large stocks of coal, and maintain the required regular mixture for the coke ovens at all times.

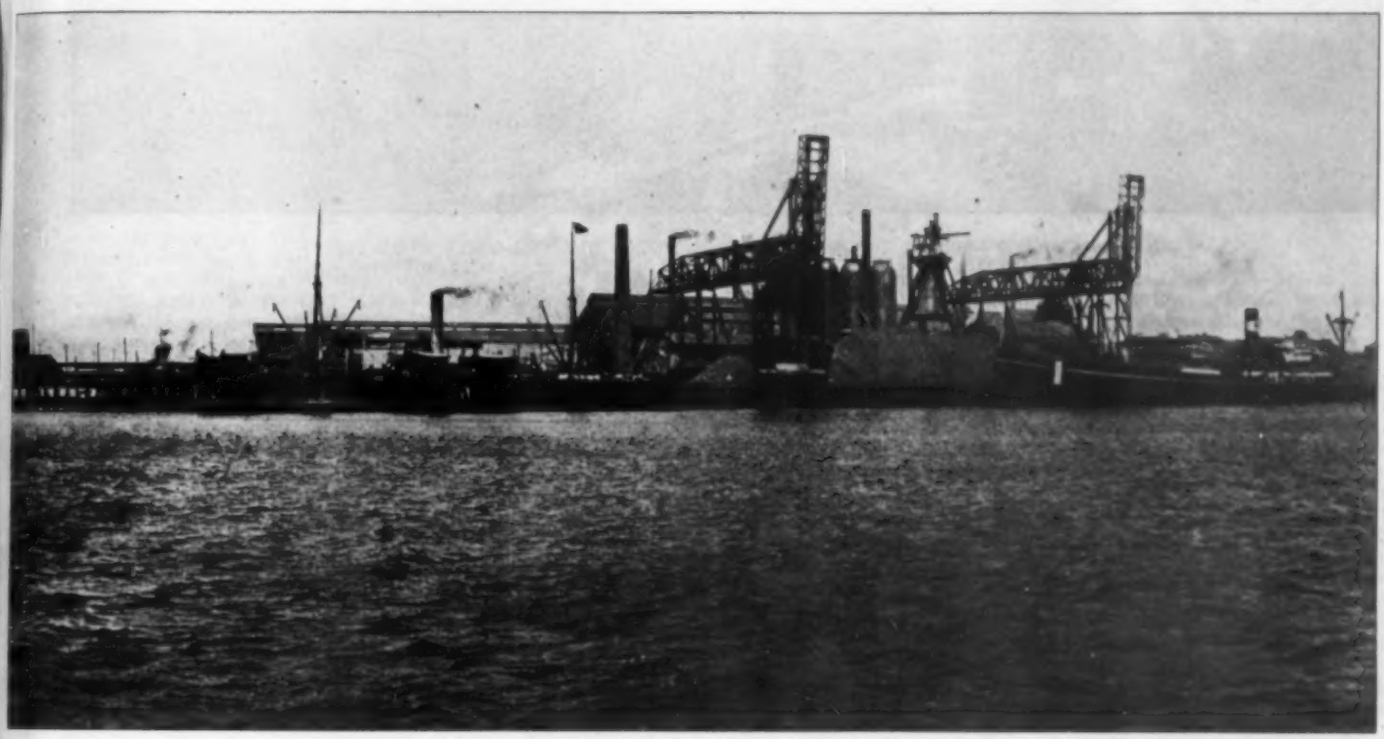
The coal loading plant consists of a storage bin, with a capacity of 5500 tons, and the coal is handled by means of an inclined travelling belt. The coal having been dumped into the receiving hopper, the belt takes it and distributes it along the top of the bin. Later it is removed from the bin by another belt conveyor underneath, which is commanded by suitably placed shoots, and is delivered into the ship. An adjustable boom and trimming shoot enable the greater portion of the coal to be trimmed as it flows into the vessel's hatch. The government has dredged a channel 25 feet deep at low water spring tides and 300 feet wide. There is also a swinging basin 500 x 600 feet.

In every department the latest appliances have been installed, and the mechanical engineering workshops are no exception. Modern machinery is in use there, and some of the material for the construction of the buildings was made in these shops. An additional machine ship of substantial construction is now in course of erection.

In the process of manufacture samples are taken and chemical analysis made in the company's laboratory. A testing laboratory complete with equipment for making tensile and other physical tests, as well as taking photographic records of structure, is also established.

When the wire-rod mill is producing the company will be in a position to supply wire manufacturers with material. Steps have already been taken by another concern to establish galvanizing works on a site adjacent to the company's property, and at a future date the manufacture of galvanized sheet iron, fencing, and other wire will no doubt be successfully launched.

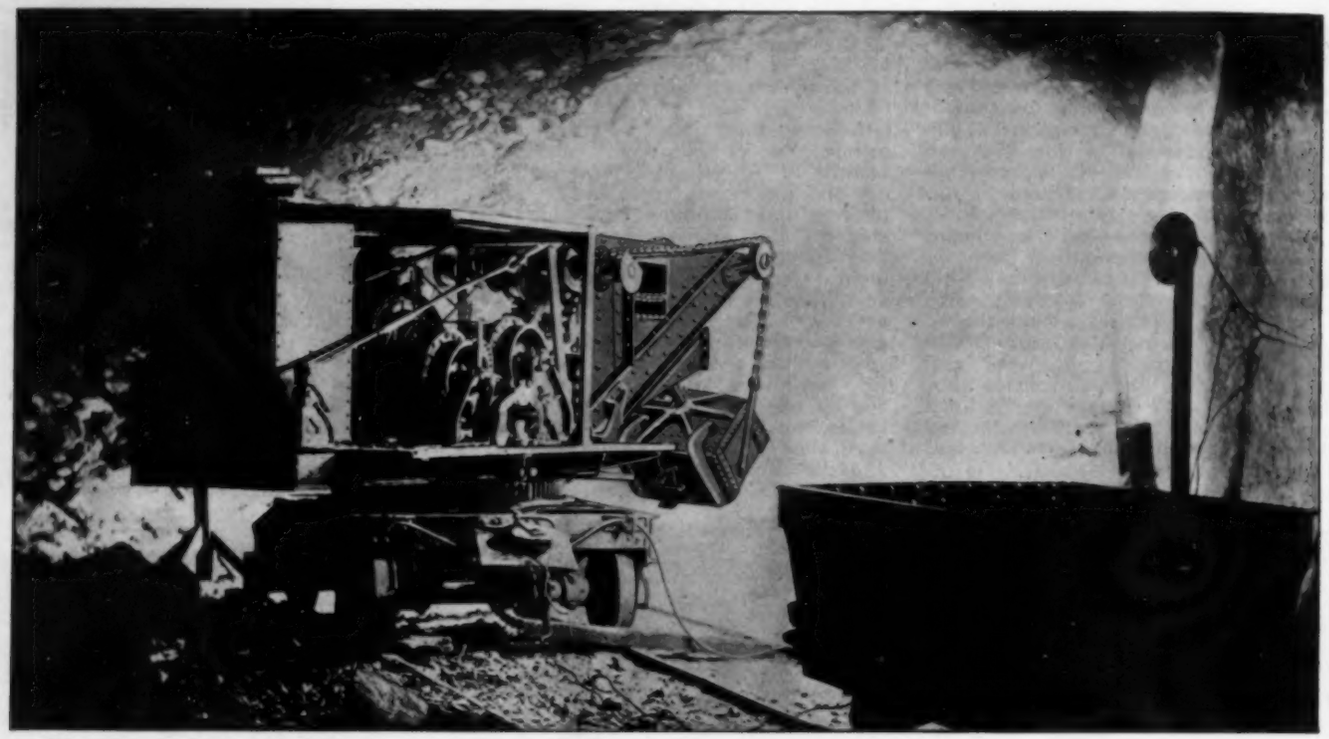
The area of land secured by the



THE BLAST FURNACE IS TRANSFERRED BY MEANS OF AMERICAN-MADE UNLOADING EQUIPMENT TO EITHER THE STOCK PILE OR TRESTLE BINS

emerges as the finished steel rail, is also done by mechanical means. In this connection the management estimates that a parcel of ore taken from the ore pile at the wharf can be converted into a finished rail delivered into the truck inside 48 hours. Large 5-ton magnets do the final handling of the steel rails, and place them on the cars for shipment. Even in the case of the coal for the power-house the handling is done with grab buckets, which serve the hoppers of the boiler stokers. Magnets will also be used for many other purposes in connection with the works, not the least important being the breaking up of the large pieces of scrap which come from the steel furnaces. The magnets are electrically operated, and the one used for the breaking of scrap lifts a 5-ton ball and drops it on the scrap with a force far exceeding that which any man could exert.

The company's supply of iron ore is being drawn from the Iron Knob deposits, in South Australia. These



ELECTRICALLY-DRIVEN UNDERGROUND-MINING SHOVEL OF THE FULL-CIRCLE SWING TYPE

company is 380 acres, with a fine frontage to the harbor. About 100 acres are taken up by the units now in operation and by the necesasry buildings. The different sections of the works are arranged in parallel lines and this presents the double advantage of making extension easy at any time, and of keeping the power and lighting control in a central position, which naturally tends to greater efficiency in the running of the works. In the laying out of the works many miles of roadway have been made, and there are about 20 miles of railway, while 15 locomotives are employed.

The establishment has now reached dimensions exceeding that of many older established works in other countries. The iron made is of the finest quality, and the soft steel turned out is exceptionally pure. Steel experts consider that the steel will compare favorably with any steel produced in America or England, and the quality of rail steel has already been proved to be satisfactory.

At the present time there are about 3000 men on the works, a number of these being employed on construction work. It is probable that the wages exceeds that of any other private industrial proposition in Australia.

It was a most fortunate circumstance that the construction of these works was so far advanced at the outbreak of war. Australia today would have been in a sad plight indeed had it not been for the products of the Broken Hill Proprietary Co.'s iron and steel works. Since the inception of operations over 250,000 tons of steel products have been rolled. In addition to rails for the transcontinental and other lines, the company has supplied steel for railway carriage and locomotive tires and axles, drill steel for mining, and rods and sections for a variety of purposes. In addition 10,000 tons of munition steel have been shipped to Great Britain and taken over for manufacture without any being rejected; this speaks well for the quality of the material. The company is now engaged in the manufacture of plates and other material for the commonwealth government's shipbuilding campaign.

Swing-Type Mine Shovel

Electric shovels are becoming increasingly desirable and essential in underground mining. For years many of them have been used in underground iron mines, in coal, zinc, limestone and salt mines. Their performance has definitely established them as highly productive, economical factors in this class of excavation.

Experience has proven that electricity is the ideal power for these underground mining shovels. It is economical, safe and easily handled. Electricity need be used only while actually digging. Current can be switched on or off instantly. Electric power eliminates the dangers of explosions in coal mines caused by gases coming into contact with an open fire.

The construction of the underground mining shovel shown in the accompanying illustration is novel, not in the sense of being new and untried, but a somewhat radical variation of the standard full-circle swing type of steam shovel. This shovel which was built by the Thew Automatic Shovel Co., Lorain, O., is an abridgment of larger shovels, but with a difference in construction and working features to adapt it to advantageous and profitable use in the conditions peculiar to underground operations. It possesses all the rugged strength and dependable digging ability of the bigger shovels in concentrated form. Its compactness does not, however, complicate its control, for it is easily operated by one man very efficiently. Compacting the construction of the shovel—minimizing its over-all dimensions, was the basic step in its adaptation to underground mining. Besides the restricted operating rooms, narrow entries and passage-ways had to be considered, as well as the shaft through which the shovel is taken into the mine. The shovel is so built that it can be quickly dismantled for passing through these restricted areas and speedily erected for succeeding operations.

The motor is of the single, constant-speed type, with friction controls. Hoisting, crowding, swinging and propelling movements are all controlled direct from this motor, minimizing physical effort by the operator and enabling him to easily speed up tonnage delivery.

A shovel equipped with a 20-horsepower motor over a period of nine months removed 4141 tons of ore. The total cost including labor, supplies and power was $685.72. The cost per ton of ore loaded was 16.6 cents.

These costs covered all the expense involved in actually loading the ore and tramming it about 300 feet to the main haulage way. They include, also, the expense of moving the shovel to different levels and locations. The ore was loaded into 3-ton, gable-bottom cars.

Under identical conditions the per ton loading cost by hand-labor was 30 cents and by shovel 16.6 cents. The saving per ton effected by the shovel was 13.4 cents or $5000 in nine months.

In a western zinc mine a mining shovel loaded 125 cars in 5¾ hours at a cost of less than 9 cents per ton, including tramming. This represented a reduction in cost of handling material and hauling it to the shaft for hoisting to the surface from 16 cents and 18 cents per ton by hand to 9 cents by the shovel, a direct saving of 45 to 50 per cent.

Copper Company Makes Ferroalloy

Electric Furnace Plant Just Completed by the Anaconda Copper Co. Will Add a Heavy Tonnage of Ferromanganese from Western Low Grade Ores —Hydro-Electric Development Makes Project Feasible

MANGANESE is esential in the manufacture of steel. Trite as this fact is to every one even remotely connected with steel production, its reiteration probably does not carry the full significance to the casual observer. It has been stated that manganese is consumed at the rate of 13¼ pounds to every ton of steel. With the transmutation of steel to the class of precious metals by war's demands, the importance of manganese has become all the greater.

When the history of the war is written, and light is admitted, upon all of the causes and effects of America's great industrial accomplishments, the story of manganese will prove most interesting. It will be told how the importance of the metal was weighed against the crying need for ships; and how the importation of manganese was stopped by the war industries board, trusting in the ability of America's manufacturing genius, and the thrift of the steelmakers to supply the deficiency resulting from the cutting of manganese ore imports. A most interesting chapter in this story of American manganese will be furnished by the Anaconda Copper Mining Co.

Building Up the Manganese

The manganese ore rhodochrosite from the Butte mines of this company averages only about 37 per cent manganese, and carries about 6 per cent silica and 2½ per cent ferrous-oxide. In ordinary times these ores would have little value and to transport them to the east in the raw state and there manufacture ferromanganese would be impracticable. Accordingly the company at the instance of John D. Ryan instituted investigations to determine the possibility of reducing the ore near the mines and then transporting the ferromanganese to the east. The result was the construction of a plant to produce the commercial metal by the electrolytic process.

The plant was constructed within the buildings of the Anaconda Copper Mining Co. at Great Falls, Montana. Five electric furnaces which are shown under construction in Fig. 1 have been completed and are now in continuous operation. The plant treats five carloads of the rhodochrosite or pink carbonate of manganese ore daily, and requires in the reduction process two carloads of coal, and one carload of limestone daily. Power for the furnaces is furnished by the Missouri River developments of the Great Falls Power Co.

The five furnaces are each 11 x 14 x 28 feet outside measurement and 8 x 10 x 22 feet inside. They are of the Siemens open-top type with crucibles 6 x 9 x 22 feet. They are operated on a 3-phase, 60-cycle current. The current comes from a substation within the plant which takes the current from the high-tension lines at 100,000 volts and steps it down to 6600 volts. Each furnace has a transformer rated at 5600 kilovolt-amperes furnished with taps to obtain 85, 100, 115 or 130 volts on the low-tension side. The furnaces at present are operated at 85 and 100 volts and it is the intention to run

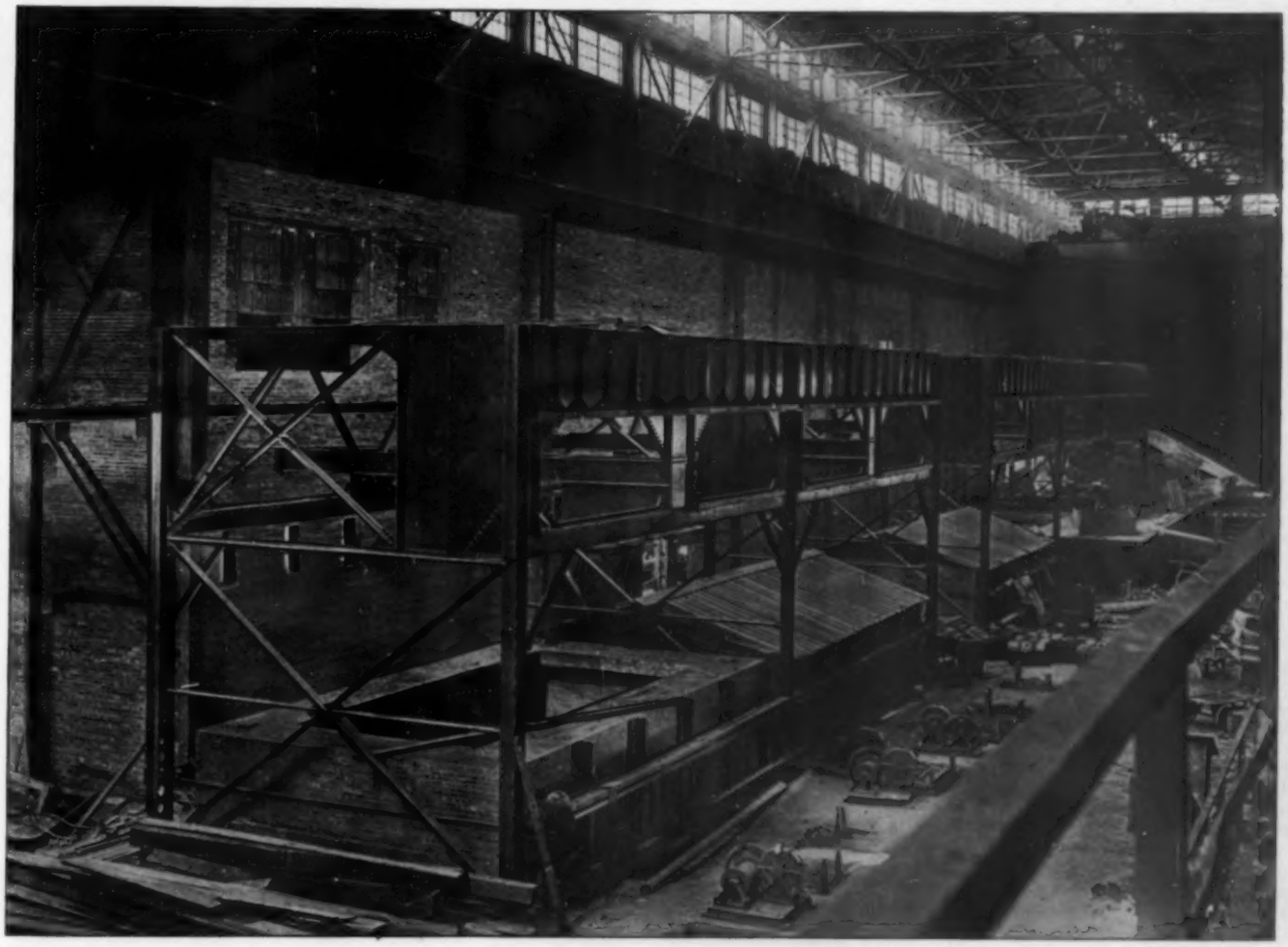


FIG. 1—BATTERY OF FIVE OPEN TOP ELECTRIC FURNACES UNDER CONSTRUCTION AT THE GREAT FALLS, MONT., REDUCTION WORKS.

FIG. 2—ELECTRIC FERROMANGANESE FURNACES IN OPERATION

the amperage up to about 25,000 amperes per phase.

Each furnace is equipped with six 24-inch round amorphous carbon electrodes, each two feet in diameter and weighing about one ton. The plant will use about 250 tons of electrodes each month at full capacity. The size of these electrodes may be appreciated from Fig. 2 accompanying.

Composition of Charge

The Emma mine, operated by the Anaconda company will supply the greater part of the manganese ore. This averages as was stated about 37 per cent manganese. The ore is mixed into a charge of the following composition: Manganese ore, 60 per cent; iron ore, 2½ per cent; limestone, 15 per cent; coal 15 per cent, and coke 7½ per cent. This mixture is reduced under electric heat at about 1600 degrees Cent. and the ferromanganese and slag are tapped together from the furnace into ladles, from which the molten mass is cast into clay-lined, cast-iron molds. The slag remains at the top of the mold and is readily skimmed from the metal by hand. Ferromanganese is obtained which analyses approximately 80 per cent manganese, 10 per cent iron, 5 per cent silica, 5 per cent carbon and less than 0.01 per cent phosphorus.

The rapidity which characterized the construction of this plant is due in some measure to the fact that the existing buildings of the Anaconda company were utilized. These buildings possessed crane and track facilities which would have taken considerable time to build. Construction was started on March 5, and in less than four and a half months, namely, September 18, the current was turned on in the first furnace. Credit should not be reserved, however, from the officials of the company who expediated the work. The investigational work to determine the feasibility of the project was carried on along lines of information furnished by the bureau of mines.

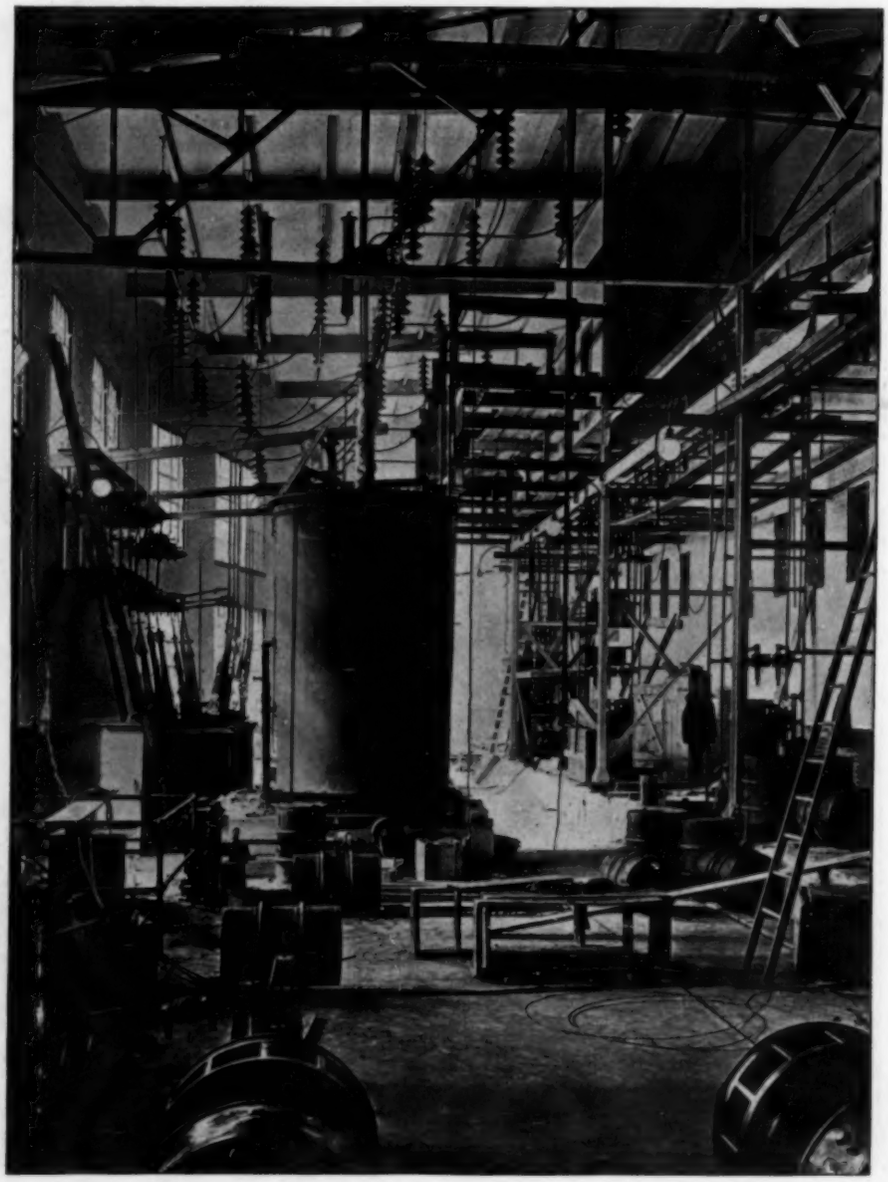


FIG. 3—INTERIOR OF FERROMANGANESE SUBSTATION

Wall-Type Switching Unit Embodies Safety

A wall type switching unit, recently brought out by the General Electric Co., Schenectady, N. Y., is designed for the control of alternating current circuits up to 300 amperes and 2500 volts. It consists of an industrial type oil circuit breaker with a space above which serves as a housing for disconnecting switch, current and potential transformers.

Such a switching unit is particularly adapted to the control of circuits feeding banks of transformers; motors in steel mills and pumping plants where it is desirable to mount the motor control appliances on walls or pillars. The unit is self-contained and may be considered as "safety first" in every particular. Wall type units are designed for single or group mountings and have a large bus compartment just above the disconnecting switch and inside the cast-iron housing. Conduit connections with the unit can be made from above, below or from either side of the switch.

Modern Barge Line Transports Ore

Large Empire State Producer of Iron Ore Operates a Fleet of Steamers and Barges Carrying Ore from the Adirondacks, Down the Hudson to Tidewater—Experiment to Find Efficient Type of Carrier

WHAT the development of the splendid inland waterways of New York state means to the iron ore mining industry of that state was graphically related at a meeting of the New York Inland Waterways association in Brooklyn, N. Y., Nov. 7, by Lewis W. Francis, president of Witherbee, Sherman & Co., the largest producers of iron ore in the Adirondack region. This company just has placed in operation a modern fleet of steamers and barges which are to be engaged in the transportation of ore from Port Henry, N. Y., by way of the reconstructed and enlarged Champlain canal.

The original canal connecting Lake Champlain with the Hudson river was completed in 1823 and beginning with that date much of the product of the mines was sent to Hudson river and other eastern furnaces by this route. With the advent of the railroad, however, much of this tonnage was diverted from the canal, and for the last 10 years or more the ore tonnage moved by water has been almost negligible.

This was due not merely to railroad competition but primarily to the fact that the old system, including prism, locks and boats, had become obsolete. The draft permitted was barely 6 feet, with locks accommodating boats less than 100 feet long and correspondingly narrow; boats were old and weak and were drawn by mules. The average load of a canal boat was less than 150 gross tons. Under these conditions, to which should be added fairly high charges for lake and river towage, the few boats remaining found more profitable freights than the iron ore traffic afforded.

Offers Many Possibilities

The development of the new canal system offered an interesting field for study and several years before the completion of the Champlain branch, Witherbee, Sherman & Co., the largest producers of iron ore in the Adirondack region, began investigations, realizing the possibilities of this new waterway as a means of getting the product of its mines to the markets. Existing transportation companies were urged to make contracts for movement of ore under the changed conditions, but no progress was made as none wished to take the risk of naming rates lower than those already existing by all rail in advance of a knowledge of what the conditions would be.

Reports were secured from experts, no two agreeing as to type of boat or method of operation and it became necessary therefore for the ore company to work out the problem for itself. For experimental purposes two Erie canal cargo steamers, the RED JACKET and TUSCARORA, with four consorts or canal boats each, were bought and operated during the summer of 1916 under charter between Albany and New York, ore being brought from Port Henry to Albany by rail.

In the spring of 1917 the Ore Carrying Corp. was organized as a subsidiary of the mining company and took over the boats as an operating company. An additional steamer, the CHARLESTON, with 5 consorts, making a fleet of 3 cargo-carrying steamers and 13 canal boats, were also purchased.

The officers of the company had become convinced from experience in operating these boats that they were warranted in launching forth upon a more extensive program and in the fall of 1916 they authorized Theodore E. Ferris, naval architect, to prepare plans for a modern fleet of boats especially designed for the transportation of iron ore. Mr. Ferris was given the widest latitude, instructed only to study the canal problem from a modern viewpoint and develop a type to carry ore at the least cost per ton at the most economical speed. The results of the operation of the smaller boats were placed at his disposal, but he was not limited to the fleet type as distinct from the single self-contained boat of the largest practical dimensions.

Prepares Plans

After careful study, Mr. Ferris concurred in the opinion already reached by the owners, that the best results would be obtained with a fleet of four boats, one having power, of a size to fill the locks completely, and plans were prepared for steamer and consorts of the following dimensions: Length over stem and stern bumper 152 feet, beam 21 feet, molded depth 22 feet, at side center 12 feet 9 inches, sheer forward and aft 1 foot 6 inches. The four boats were designed to carry about 2800 gross tons of iron ore on a 10-foot draft.

The models were carefully studied in order that they might offer the least resistance when under way and the power calculated to propell the fleet at the most economical speed, which was found to be between 6 and 7 miles per hour running loaded. As a result, the steamer WALTER C. WITHERBEE and one barge were built by Ira S. Bushey & Sons and three barges have been launched from the yard of John B. Heaney, both of South Brooklyn, N. Y. The barges are known as Occo 100, Occo 101, Occo 102 and Occo 103.

Considers Three Materials

Steel, wood and concrete were carefully studied as materials to be used in construction. Modern marine practice favored steel, but owing to war conditions, steel was high in price and practically unobtainable. Aside from original cost, however, steel hulls were not considered the best for canal boats running in shallow water as it was feared that temporary obstructions in the canal might damage the bottoms, especially in the canalized river sections and through rock cuts. As no adequate repair shops are located along the line, the risk was thought to be greater than necessary.

Concrete, while the cheapest in original cost, was at that time practically untried and a boat designed to withstand the heavy stress and strain of iron ore cargoes, had a carrying capacity of about 20 per cent less than a wooden boat of the same dimensions, thereby increasing the operating costs in proportion. New aggregates and methods of construction will undoubtedly remove or minimize these objections and it is possible that concrete boats will some day be successfully navigated upon the canals. Were it not for the great weight of iron ore per cubic foot it is possible that this type of boat might have been selected because of quick and comparatively easy construction. Wood, however, was chosen as it was the material

STEAMER WITH FIVE BARGES UNLOADING ORE AT ELIZABETHPORT, N. J.

most widely used in canal draft and the hulls were laid down as rapidly as timber could be secured.

The hulls of steamer and barges were practically identical except for the stern, the steamer having a 44-foot run while the barges have a rake stern. Both are more finely modeled than any cargo canal boats heretofore built. The hatches are large to enable the efficient operation of grab buckets. The barges have ample cabin accommodations and the steamer has rooms for a maximum crew of nine men with extra stateroom for deep-sea pilot or owner. The WITHERBEE has the following machinery equipment:

One fore-and-aft compound engine, with cylinders 15 and 30-inches bore by 22-inch stroke; two watertube boilers, 150 pounds working pressure, 3220 square feet of heating surface, using oil as fuel; one combined air and circulating pump; one horizontal main feed pump; one horizontal fore and bilge pump; one horizontal sanitary pump; one generating set for electric lights and searchlights, 7½ kilowatts; steam steering gear and other equipment such as oil fuel pumps and heaters. The tanks for fuel oil have a capacity to give a steaming radius of 1000 miles. The distance from Port Henry to New York harbor being approximately 270 miles, this is more than adequate for the round trip.

The fleets have been operated with both single and double crews. Undoubtedly the double crew will be used when the channels are thoroughly dredged and better understood. Night navigation in some portions of the canal has been thought inadvisable this year.

Finding the Cost

In determining costs the primary considerations may be briefly stated as "time, tonnage and terminals." In other words the boats must be kept moving with the minimum of delay, carry heaviest practical cargoes, with quick despatch at terminals. To secure the latter essential, an extensive concrete ore dock has been constructed at Port Henry for the storage and transfer of ore. This wharf is 900 feet in length along the lake shore, 256 feet wide and is served throughout its length by an ore bridge of 256 feet span. This bridge with bucket carrying from five to six tons of ore can load boats at the rate of 300 to 400 tons per hour, depending upon whether the ore pile is at the front or back of the wharf.

Preparations for Unloading

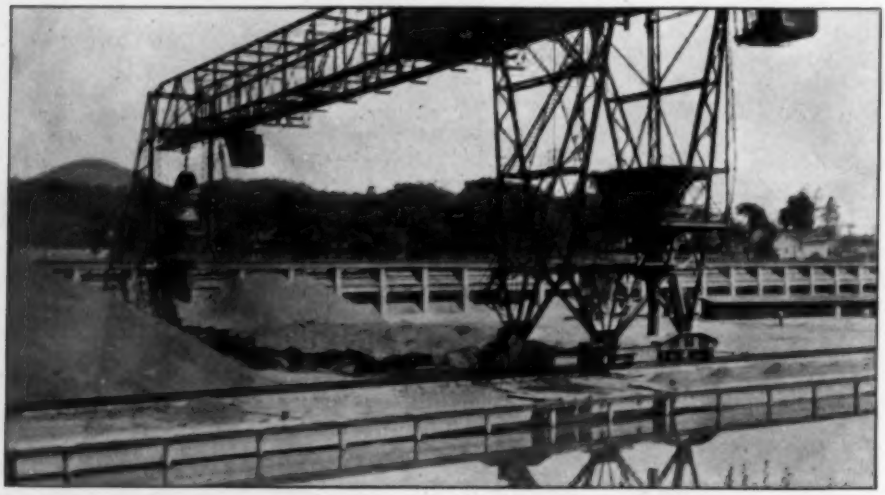
The terminals in New York harbor are not as yet in good shape for giving quick dispatch, locomotive cranes being used for unloading. The Lehigh Valley railroad in conjunction with the Bethlehem Steel Co. has erected extensive ore handling appliance at Constable Hook, N. J., which in due time will be available for large canal boats. For the present, however, it has been found advisable to use the slower method and maintain several lay boats, that is, when a fleet arrives at the railroad piers, cranes unload steamer and push boat, the operation requiring about a day. They are then ready to start upon the return trip, taking light boats left by the previous fleet, and leaving the remaining boats of the tow to be more leisurely unloaded and picked up by the next fleet. This method minimizes the delay to the motive power.

Theoretically, the smaller fleets make three round trips per month with double crews, the large fleet four round trips per month, but owing to unfamiliarity with the route and danger on the canalized Hudson while running at night, to say nothing of the extreme difficulty of securing permanent crews under the present condition of the labor market, the boats have been run most of the time thus far with single crews.

The small fleets operate in groups of one steamer with four or five canal boats locked two abreast and three in length, filling the locks lengthwise with about 10 feet to spare on the sides. A group of five has been found to make up most advantageously for towing with the least delay in lockage, although our observations suggest that this may still be improved upon. With a draft of 8 feet 6 inches, such a fleet carries about 1400 tons of ore.

Return cargoes have not been sought as the boats have been operated primarily for the transportation of the greatest possible tonnage of iron ore and it was desired to eliminate unnecessary delays. As the business develops coal or other heavy cargoes should be taken on return trips to give added revenue. The Ore Carrying Corp. now operates five cargo-carrying steamers and 19 barges or consorts capable of transporting 160,000 tons of ore during the season of canal navigation, making due allowance for incidental delays. During the winter months the boats are used in New York harbor or on Long Island sound in the coal traffic.

A word should be added as to the attitude of mind, or rather the breadth of vision, with which those who are to use the state waterways should approach the subject. The use of the word canal in its old meaning, with its old limitations should be discontinued. The state has extensive waterways, real navigable rivers, no longer ditches limited by a tow path, a few mules and all that smacks of that ancient and leisurely means of transportation. We have a businesslike system which must be utilized by business men in an up-to-date way. The last word in inland water transportation has by no means been said—foreign countries can teach us much—present-day ideas may be greatly modified or changed, but it is believed that this means of transportation will soon attract the high talent, both constructive and operative, that its possibilities suggest and its magnitude demands.



NEW IRON ORE DOCK OF WITHERBEE, SHERMAN & CO., AT PORT HENRY, N. Y.

Large Chrome-Ore Deposit

Since the discovery, more than a year ago, of a rich deposit of chrome ore in Rhodesia, Southeast Africa, which many experts state is the largest of its kind in the world, extensive development has been going on, and at present the owners of the deposit, despite the fact of being handicapped by the lack of modern mining implements, have exposed fully 2,000,000 tons of exceptionally fine quality chrome. Work is being conducted at a rapid pace and enormous additions to the proved tonnage are being made. The deposit is situated in the Umvukwes, and was discovered by Albert Peake, Umvukwe ranch, Lomagundi.

Excellent chrome is carried over the whole of the claims, which cover an area of 4500 acres. The country is serpentine and the ore occurs in a series of eight parallel lines, the total length of the strike being over 30 miles. An average content of the ore taken from 300 samples at wide intervals, show that the ore is wonderfully consistent in value, the tests showing that it contained no less than 53 per cent chrome. In addition to the vast tonnage of ore in place, there are 1500 acres of alluvial chrome-bearing soil, the concentrates of which average 45 per cent mineral, assaying 48 per cent chromic acid.

According to reports from Banket Junction, which is 30 miles from the deposit, plans are already being made for the construction of a branch railway line. No difficulty in building such a line is contemplated, and experts point out it could be completed within five months. When the site of the strike is linked with the main railway line, eminent enginers estimate the ore delivered at Beira would cost under $8.50 a ton.

New Industrial Era in California

First Gold, Then Fruits and Flowers, Now Shipyards, Machine Shops and Metal Working and Manufacturing Interests Predominate—Foreign as Well as Domestic Requirements to be Provided for

SAN FRANCISCO, Nov. 11.—Sixty-five years ago the world was mostly interested in the gold of California. Wonder tales that were carried east then were of new discoveries and the luck of the mining camps. Then there was the era wherein the eulogist rhapsodized over the fruits and flowers. But following the general law of evolution, California has now become a manufacturing community. The investment in shipyards, machine shops, metal working and manufacturing establishments has grown to manifold proportions.

Metal working in California gives promise of establishing itself in a position to take care of foreign as well as domestic requirements. Just as an instance, the Oakland plant of the Judson Mfg. and the Pacific Coast Steel Co. are producing forging ingots up to Lloyd's and the American bureau standard by the open-hearth process. As a result of the experiments under the direction of the two companies the shipping board is ordering shafts for its ships here, instead of having only the machine work done in the west.

Expect 75,000 More Workers

To meet the demand for housing accommodations for the shipworkers in this section, San Francisco and the trans-bay cities recently conducted a housing survey more comprehensive in its scope than any before. Confronted by an anticipated influx of 75,000 workers within the next 90 days, the United States Housing corporation and the Emergency Fleet corporation with the assistance and collaboration of the municipal authorities caused a complete canvas of the territory to be made. The officers of the housing corporation here are engaged in the task of tabulating the result of the survey of all of the large cities of the coast and supervising the erection of new houses for employes at the navy yards at Mare Island, Cal., and Bremerton, Wash.

Organization of the nineteenth region of the resources and conversion section of the war industries board, comprising the states of California, Arizona and Nevada, has been completed. Frederick J. Koster, president of the San Francisco chamber of commerce, is the regional director. The region has been divided into subregions with headquarters in San Francisco, Sacramento, Stockton, Los Angeles, Eureka and Redding, Cal., Reno, Nev., and Phoenix, Ariz. District No. 1, which includes San Francisco and San Mateo counties, have the following men at the head of divisions in the metals group: Castings, Frank D. Simmen, chairman; gray iron, Chas. Hoehn; malleable, W. B. Jewell; steel, H. H. Whiting; brass and aluminium, M. G. Jeffress; forgings and stampings, Thomas Pennington, chairman; forgings, Joseph Eastwood; stampings, D. F. Larkins; sheet metal, A. V. Conlin; metal life boats and rafts, John F. Twiggs; machinery and machine products, Constant Meese, chairman; Fred C. Metcalf, secretary; electrical, Paul C. Butte; machinery, P. L. Bannan; machine shop equipment and supplies, C. F. Bulott; nonferrous alloys, Wm. Stadfeldt; structural steel, H. H. Morris.

In the second district, including Alameda, Contra Costa and Solano counties, the following appointments in the metals group have been made: R. H. Marchant, chairman; George S. Drew, secretary; Walter Mittick, electrical appliances; W. H. Oliver, machine products; O. A. Kenyon, machinery supplies; D. L. Johnson, bar metal; H. C. Meanlly, chairman, and D. Guild, secretary of castings division and W. F. Fairbairn, chairman and A. Youngholm, secretary of the stamping and sheet metal division.

An advisory board for scrap metal in the San Francisco district has been appointed by Emory E. Smith, Pacific coast commissioner of scrap iron and steel. The members are A. F. Pillsbury, C. O. G. Miller, J. Q. Brown, C. M. Henderson, H. H. Whiting and W. H. McDaniel.

A committee to list essential industries and supervise the distribution of labor to them has been appointed by W. T. Boyce, director of the United States employment bureau in the western district. The members are Charles Day, representing the chamber of commerce; O. H. Fischer, representing the California Metal Trades association; Daniel C. Murphy, representing the state federation of labor and Frank C. Miller, representing the iron trades council.

The production of silico-manganese in the United States was doubled recently when the Pacific Electro Metals Co., Bay Point, Cal., doubled its capacity by the installation of anothher 3000-kilowatt furnace, which will give a daily capacity of from 20 to 24 tons. Established less than a year ago, the plant at Bay Point is the only concern in the United States engaged in the production of silico-manganese and the company is finding a ever-widening market based on the elimination of a step in the manufacture of steel and the conservation of car consumption in shipments to manufacturing centers.

Under the present government price for manganese ore, miners find it unprofitable to send east ores high in silicon. Their only alternative, before the establishment of the plant at Bay Point, was to install concentrating plants. This was a costly operation which many of the operators could not afford. All of the United States' manganese ores run high in silicon.

Ferro-manganese is manufactured by the Noble Electro Steel Co. in Shasta county, Cal., with a capacity of from six to seven tons a day. The Pacific company's product runs from 50 to 55 per cent manganese and from 20 to 25 per cent silicon with less than one per cent carbon, it is claimed.

With the railroads of the country consuming 20 per cent of the annual production of coal and fuel oil and said to be wasting a large portion of it through inherent inefficiencies of steam locomotion, D. M. Folsom, director of the Pacific coast section of the oil division of the fuel administration, has recommended to Director General of Railways McAdoo the electrification of 510 miles of the mountain divisions of California railroads. This recommendation is based on the report of W. F. Dietrich, engineer of the oil division of the fuel administration, showing that a net expenditure of $23,000,000 on the proposed electrification would result in an annual saving of more than 3,000,000 barrels of fuel oil and would return a net profit of 9 per cent on the investment, at the present prices for fuel oil. The report shows an annual saving in operation of $4,923,300, of which $4,147,000 represents the value of the fuel oil saved.

The divisions recommended for electrification are the Sacramento division of the Southern Pacific Co., 157 miles from Roseville. Cal., to Sparks, Nev.; the Shasta division of the Southern Pacific Co., 215 miles from Gerber, Cal., to Ashland, Oreg., and the San Joaquin combination division of the Southern Pacific and Santa Fe railroads, 138 miles from Bakersfield to Saugus.

Iron Mines of '76 Fame Will Produce Again

Iron ore mines in the vicinity of Sterlington, N. Y., during the Revolutionary war played an important part in helping the colonials to win their independence from the British crown. These same mines, after being idle for years are to be reopened to help fight the present battles. It was in this locality that the metal was mined and forged for the gigantic chain, which the American minutemen stretched across the Hudson river to prevent the British high seas fleet from going up the river to attack points above the Highlands. This chain has for years been on exhibit at Washington's headquarters at Newburg, N. Y.

The revival of the spirit of '76 became apparent with the recent announcement that 100 workingmen's houses would be erected in the vicinity of the mines, and mining would be taken up on an elaborate scale. The property on which the mines are located is controlled by the Ramapo Ore Co. There are about 20 mines in the group, all of which are not productive. Iron mining in the region dates back to 1771.

British Iron and Steel Prices Go Up

Finished Products Advanced from $75.65 to $77.06 With an Increase of 2½ Per Cent in Wages of Workers—Sheets Also Increased in Price—Government Demands Relax—Heavy Demand for Pig Iron

Bureau of THE IRON TRADE REVIEW,
Prince's Chambers, Corporation St.,
Birmingham, Eng., Nov. 2.

DEMAND for pig iron has stiffened again so that very few buyers are able to satisfy their needs. In the Cleveland district orders during October were nearly all on a larger scale than they were in September. This was partly due to reduced deliveries, few consumers having received their orders for September fully executed.

Strong efforts are being made to spare an adequate tonnage of iron for our allies, a department whose interests are watched over by the allied commissions. The special preference in coal supply given by the coal controller has put the furnaces in a better position and makers are hopeful of being able to meet the larger demand. The railway situation also has eased a little, and the requisite trucks are available.

In all parts of the kingdom the most insistent demand is for foundry iron, of which the supply is insufficient. In the Midlands users are concerned about their needs during the December quarter. Much business is on offer but smelters book very cautiously, usually at reduced tonnages. As a rule, they will not go beyond 200 ton lots, though in a few rare cases they book 400 to 500 tons. Much pressure has been applied to induce them to take on new customers. The most common assurance from those who make first appearances as buyers is that they will continue as customers after the war, but this does not impress makers who are more concerned just now to avoid new business than to cultivate it. No new applicant has a chance unless his order is backed by a peremptory instruction from the government.

Makers look forward to a further addition to their wages bill, as the result of the new price ascertainment under the wages board, which gives the ironworkers in the mills and forges a raise of 2½ per cent. Blast furnacemen will benefit in accordance with an agreed pro rata. No change in price of pig iron has been made, and makers have no difficulty in getting the full scale charges for all brands.

Hematites both in east and west are insufficient, and the make has to be carefully allotted. The production of steelmaking irons has by no means kept pace with the demands of the ever growing and extending steel works.

Finished Iron and Steel

After a fairly long interval, the upward movement of wages has been resumed. The Midland iron and steel wages board has issued its bi-monthly return of selling prices for July and August and the northern board will do so in a day or two. The result is a rise in the selling price from £15 15s 2d ($75.65) to £16 1s 1d ($77.06). This carries for October and November a raise of 2½ per cent for forge and millmen and the wages of puddlers become 19/9 ($4.74), the largest earnings in the history of the trade. The raise was generally expected, in view of the several advances sanctioned by the ministry of munitions during the last three months. They will enable better wages to be paid to helpers, who have been leaving the iron works, tempted by higher wages in other trades where the physical strain is not so severe.

The most significant feature of the report is the big fall in output by the 17 selected firms whose figures form the basis of the ascertainment. The production for the two months was 23,739 tons, compared with 27,578 tons in the previous two months. This is the expected sequel to the summer heat, the scarcity of fuel and of men, and various other difficulties.

Another price change has been authorized by the ministry of munitions. Sheets are advanced from £17 ($81.60) to £17 10s ($84). Lots of ten tons and upward will carry a maximum of £17 10s ($84) and there will be a graduated scale for smaller lots as follows: Between two and 10 tons £18 ($86.40); between one and two tons £18 5s ($87.60); between 500 pounds and a ton £18 10s ($88.80); under 500 pounds £19 ($91.20). The lots must be of one size and one thickness, otherwise they will reckon separately. Close annealed sheets will be £18 5s ($87.60) instead of £17 10s ($84).

It is expected that the next product to receive attention will be gas strip, for which the present price is £15 5s ($73.20). Makers consider this figure cannot be reconciled with the present price of bars. Manufatcurers have been taking counsel together lately in the preparation of costs lists which they consider should impress the ministry when they are presented.

The improved war position brought a better attendance on 'change yesterday, and the tone was buoyant. Users of nonwar steel are inquiring as to their prospects of getting a little more consideration at the hands of the manufacturers. In this direction, it appears, better success has lately been realized. Despite a production below the average, such buyers have managed to get a few parcels from the ironworks. The cause seems to be that the government has not been ordering quite so plentifully of late, or has allowed longer intervals to lapse between its demands. It is known that enormous orders for export have been awaiting acceptance for many months, and they will flow into the mills the moment there is any chance of their acceptance.

The chief trouble continues to be coal scarcity. Here and there, works are starting on Monday, and getting laid up by Wednesday for one or two days till a boatload of coal comes in to set the wheels revolving once more. Generally, the maker manages matters better by waiting until he sees his coal in the works in sufficient tonnage to get through the week. This means that most works are commencing on Tuesday or Wednesday instead of Monday. The collieries are bombarded with warnings from numerous works in and around Birmingham that they are on the point of stoppage. All the coal people can do is to refer the complaints to the coal controller who, as a rule, is also unable to get increased supplies. It is well known that the appeals to the men for improved output have for the most part been ineffectual. The householders are now claiming their share of coal and this has tightened the market to some degree.

In the steel trade it is clear that the large works extensions are having their effect. Some Birmingham merchants were a little surprised this week to get offers from steel works, especially in Wales, to supply billets and bars of which they had a surplus. Naturally, the merchants were glad to get these, almost the first offers of the kind during the war, and customers for the metal were quickly forthcoming.

Sheffield Works Combine

Burwell S. Cutler, chief of the bureau of foriegn and domestic commerce, in his report to the secretary of commerce, on preparations for reconstruction in England, said:

"In the field of industry one of the largest instances of concentration has taken place in the Sheffield steel industry, where the recent organization of the United Steel companies (Ltd.), with a capitalization of $50,000,000, represents an amalgamation of six concerns. Combinations have also been reported in the brewing and brick manufacturing industries, and the subject has been considered of sufficient importance for the ministry of reconstruction to appoint a committee for its investigation and to suggest such action as may be necessary to safeguard the public interest. An important factor making for industrial concentration is the establishment of new industries to manufacture products formerly supplied by the enemy countries. Owing to the insistent war-time demand, such industries, like the dyestuff, magneto, etc., were necessarily formed with large capital and government subsidies, and it is doubtful whether they will undergo any considerable decentralization after the war."

A chart is being circulated to the trade by the Brown Instrument Co., Philadelphia. The melting points of 50 chemical elements from nitrogen to carbon, are given, together with a color scale.

Flays Unionism's Pact With Politics

Throttling Agreement at Expense of Industry Must be Dissolved, Declares President of Founders' Association at Annual Convention—Says Usurpation of Power by Government Appointees Must Stop

WILLIAM H. BARR, president of the National Founders' association, went extensively into the labor situation and its relationship to the era of reconstruction in his annual message delivered at the twenty-second annual meeting of the association at New York, Nov. 13 and 14. One of his most striking statements was:

"We may properly demand the dissolution of the throttling agreement between politics and unionism at the expense of industry, and urge the cessation of usurpation of power by government officials or appointees."

Mr. Barr declared that labor had seized the opportunities presented by the exigencies of the war to foist on the employers in this country conditions which will affect the employment of millions of American soldiers when they return to industrial pursuits. He pointed out that while "our boys" have been fighting the battle of democracy, organized labor has been steadily making inroads on the rights of free men so that when these soldiers return they will be bound by rules which they had no hand in the making. Some of Mr. Barr's most pertinent statements follow:

"The time ahead is not one of reprisals or the remembering of ancient wage feuds between employer and employe. It is a time for better understanding of basic manufacturing principles and closer co-operation for the common good, for American industry will have a problem to face as serious as the war problem of the present. As a united country we are making successful war. We must remain united in common purpose and understanding to meet successfully and with permanency the test of peace.

Sees German Competition

"As to Germany, we must place no reliance upon trade boycotts or economic barriers. Water will run down hill, and goods at a price will reach the man to whom they are thus made attractive. To Germany's recognized ability in industry and the close co-operation between business and the German government, will be added the spur of national necessity. Without doubt we may expect to see the wages and the hours of labor of German workmen placed at a point after this war which will insure a cost of production low enough to enable German goods to compete in the world's markets.

"When peace comes, the needs of war will no longer furnish work or determine labor relationships. The vogue of those who had strange solutions for our social and industrial problems, and who were willing to experiment with a sorely tried nation in the midst of its great crisis, will cease. The present determination on the part of certain forces among the workers to attempt to cling to all that union labor has gained on an unsound basis during an abnormal and artificial period, will doubtless occasion some trouble and friction. But, in whatever form the labor problem presents itself, it must be met without resentment or bitterness, or any thought of reprisal for past wrongs, but with the sole purpose of establishing the foundation of trade and commerce upon a stable and enduring basis so that employer and workman together shall meet the country's common need and common opportunity.

Charges Discrimination

"The United States employment service under the department of labor was inspired many months ago with the idea, at least for publication, that it would be a nonpartisan body designed to furnish places throughout the country where all labor might be registered and where workers might be assigned to positions for which they were properly fitted by their previous training. Many such offices have been opened, and thousands of men have been registered, but I am well within the facts in saying that a large percentage of the managers of these offices are present officers of labor unions who discriminate against the open shop, utilizing their power to foster and promote union organization, and are seemingly intent only on the effectiveness of such co-operation. Is there anyone who is familiar with the workings of the United States employment service who will deny these assertions?

"The unionists have been anticipating the end of the war, and have apparently utilizing every method, power and force, political and otherwise, to put themselves in a position of strength entirely irrespective of the ultimate cost to the country or to industry. It is clearly their hope that when the millions of men who have served them on the battlefields of Europe, return to this country, they will be unable to obtain positions in many industries without the consent of the unions, and the manifest intent is not to give that unconditional approval. This is further illumination of the peculiar patriotism which prevented proper production of munitions to supply the soldiers when in France.

"Now, what is this force which is dictating to the President, to the departments of the government, to congress, to politicians and, presumably, a little later on, to the church? The visiting stranger from New Zealand, of whom Thackeray spoke, in reviewing the situation 100 years hence would assume that it represented a majority of the people. Truly it represents only about 2 per cent of the workers of the population of continental United States, 8 per cent of the workers of the country, with a voting strength of about half a million. In the manufacturing plants devoted to munition work in the United States at the beginning of the war, less than 9 per cent were closed shops. In the industries of shipbuilding and marine equipment only 3½ per cent were unionized.

"Further, the open shop is the actual embodiment of that individual liberty guaranteed by our constitution, and I reiterate that we should not be asked to surrender that privilege, no matter what conditions have been imposed upon us by governmental authority during the war. We have during that time willingly subordinated our own industrial views, and our own business necessities, but the conclusion of war will not give the right to a continuance of emergency powers which are being exercised with great discrimination against manufacturers."

Referring to conditions abroad, Mr. Barr said:

"It is now recognized that the war saved England as an industrial nation. Before 1914, England was in the midst of a continuing decline of her commerce, her own home markets were being invaded and increasing pauperism and unemployment was the foremost public question. And all these things, notwithstanding that England was the richest nation in the world. Nothing could better demonstrate that national wealth does not necessarily mean national prosperity. Yet England under the stress of war has performed miracles. The union worker has dropped his old restriction of output. New methods, new machinery and a new impulse have revived an industrial nation, and we now have the spectacle of England actually increasing her industrial efficiency and her natural output at a time when she has withdrawn millions of men from her industries and is waging the greatest war in her history. France, likewise, has increased to a remarkable degree, her industrial development under similar conditions. These nations are our allies now, but they will be active trade competitors when the war is over."

When the Boys Come Home

In conclusion, Mr. Barr said:

"There are millions of our soldiers coming home soon. They will have a word to say almost immediately concerning conditions here, and they will want to know the relationships between politics and the lack of production which operated to their disadvantage. They will learn of many things, and will become a dominant factor in the politics of the United States. They will entertain no maudlin sympathy for experimental industrial socialism. They will insist on fair play and they are the nucleus of a political fighting force which will demand clean politics and a better country. Shall we be worthy of their respect?"

New Labor Standards to be Created

Working Conditions Service Organized by Department of Labor to Formulate Hygienic and Safety Codes and to Deal With General Attitude of Employers and Employes—Controversial Questions Not to be Considered

WASHINGTON, Nov. 9.—Standards for working conditions in all industries are planned by the department of labor through its recently organized working conditions service. For administrative purposes there are three divisions in the working conditions service, the division of industrial hygiene and medicine, division of labor administration and division of safety engineering. Since there are in operation other agencies with the specialized function of dealing with wages and hours as controversial questions between employers and employed they will not be dealt with as such by this service.

The secretary of labor at the request of the service requested the secretary of the treasury to authorize the United States public health service to detail personnel to the division of industrial hygiene and medicine of the service. As a result of the agreement reached, Dr. A. J. Lanza, former assistant surgeon of the public health service, was detailed to act as chief of the division. Dr. C. D. Selby, of Toledo, O., will be at the head of the section of industrial medicine.

New Sanitation Codes Planned

The division of industrial hygiene and medicine will direct the formulation of sanitary and health codes for industries. Co-operation with the United States public health service will make possible extensive research work necessary to establish fundamental scientific principles as the basis for proper working conditions.

In addition to the work which the United States public health service will perform for the working conditions service, it is also authorized to make all inspections and investigations into matters pertaining to the sanitation of plants engaged on war work and into the health of workers in such industries, and into the sanitation and housing conditions surrounding the homes of war workers. In addition, the ordnance department of the war department has delegated responsibility for mechanical safety in ordnance plants.

A field force of specialists in industrial hygiene, sanitation, safety and production engineering, technically trained and of broad practical experience, has been organized which will be under the supervision of Bernard J. Newman.

The division of labor administration will deal with the attitude and policies of the management toward the employed and the personal relations between employers and employed. The chief of this section will be Dr. William M. Leiserson, of Toledo, O.

The division of safety engineering completes the working conditions service. Standards for mechanical safety have been more adequately worked out than standards for sanitation and industrial hygiene. There are now in nearly all of the states safety codes and agencies charged with the establishment and maintenance of industrial safety. Supplementing government agencies, the great energizing forces in this field, have been the national safety council and various technical societies. The policy of the working conditions service is to avoid duplication of work and activity and, by acting as a co-ordinating agency, co-operate with the forces already in the field to bring federal directing impetus in the national campaign for uniformity of safety standards, practices and equipment, standardization of safety organizations, and for the collection of data necessary for the continuous modification of standards to meet new conditions.

The bureau of standards has offered its co-operation in the formulation of codes. The assistance of the national safety council has agreed to co-operate with the working conditions service and appointed a committee of five for consultation and advice. The codes which are to be worked out under the division of safety engineering will be the result of experience and experimentation, consultation with technical organizations and conferences with employers and employes to ascertain necessary practical modifications.

The director of the working conditions service is Grant Hamilton and the assistant director is Florence C. Thorne.

Leader Denounces British Rail Strikers

(Staff Correspondence)

Birmingham, Eng., Oct. 19.—Some of the most substantial help which the kaiser has received during the war has come from the working classes of Great Britain who have never been without a strike for more than a few weeks during the whole period. In view of the splendid series of victories won lately in every fighting area, the outbreak of the railway men at the end of September aroused a deep feeling of anger and disgust.

Apparently it was this fierce storm of criticism which ended the strike in four days. Everybody felt it was intolerable in view of the superb sacrifices made, not only by our own soldiers, but by our American comrades and the French and Italians, whose trials have been much greater than those of the British. The relatives of wounded soldiers unable to return home were furious, and their public complaints vitriolic.

A remarkable sequel to the strike was the resignation of J. H. Thomas, M. P., as general secretary of the railwaymen, an expression of his dissatisfaction with the behavior of his constituents, who struck in defiance of his advice and authority. In the last speech he made before the collapse of the strike Mr. Thomas frankly supported the action of the government in defying the railway men, and he pointed out that within three days there would be a food famine in South Wales. Addressing the men he said:

"You have by your action destroyed the good name of your union; you have by one fell stroke destroyed all the influence railwaymen ever had. You have driven public opinion, which, counts in these matters, never to forgive you. You have forced 5,000,000 of your comrades and 100,000 of your fellow workmen to hate your very name.

"I only desire to hold my position in your union so long as I have your confidence, but this action shows I have not. I am going to see this out, then I cease to be your general secretary. For God's sake take my advice, make amends and get out of an intolerable position before it is too late."

Molders Demand $6 a Day

The international molders' union has made a demand on the foundries in the Indianapolis district for an increase in wages to $6 per day with time and one-half for overtime and double time payment for Sunday, and an eight-hour day. The demand also stipulates that "piece workers shall receive an increase in price in proportion to the day workers, and shall be guaranteed not less than the minimum scale of $6 per day." The union demands a reply on or before Dec. 8, on which date the existing contract between the union foundries and the molders' union expires. The demand in some instances has also been sent to metal trade firms not ordinarily classed in the foundry line.

The patternmakers in the Indianapolis district now obtain $1 per hour for 44 hours per week, with double time for overtime, the new wage rate having gone into effect Oct. 28.

To its employes who maintain a perfect record, being neither tardy nor absent during the pay period, the Blood Bros. Machine Co., Allegan, Mich., distributes thrift stamps each pay day.

Official announcement was made at the plant of the Dominion Steel Co., Sydney, N. S., recently that wages for employes whose earnings on Aug. 31 were less than 45 cents per hour would be advanced 2½ cents per hour, and that all other wages would be advanced 2 cents an hour, the change to be retroactive to September. This is the third general revision of wages made during the year. The minimum rate for unskilled labor has increased 114 per cent since January, 1916.

Shall German Industry Gain Spoils?

Crippled Condition, Commercially, in Which Her Policy of Wanton Destruction Has Left France, Belgium and Other Countries Should Not be Allowed to Work to Her Advantage—Problem is Discussed

BY L. H. MILLER

Structural Sales Engineer, Bethlehem Steel Co., Cleveland

THERE are few who do not speculate on conditions which will accompany and follow victory. We will win victory in the field but may lose peace at the conference table. Peace cannot come without something resembling a shock to our entire social and industrial system neither of which will return for a long time to their antebellum status. At the peace table we must make terms that will be the stabilizing gyroscope for this period of inevitable wobbling. The shock of war was sustained through the strengthening influence of our knowledge that war should be our only occupation. Our duty was plain, "business as usual," could not be allowed to block our industrial mobilization. We assembled all our industrial resources and are using them for a single purpose. To use mathematical terms we integrated all our differential conditions of industry into the left side of a single equation which has victory on the right side. As quickly as we found ourselves we set about to fit all undertakings into the victory equation. With hundreds of millions of citizens of the allied nations working on the same task there was sure to be some confusion and errors. But the result has been to instill into each individual the thought of war or rather the victory to be attained by united effort. With the victory equation approaching solution, we must not relax our efforts but must prepare to mobilize our victory. Victory is our power plant and engine of peace and we must be prepared to use it. What will we do with it? Victory and peace are different but peace requires that we must first have victory.

Victory Alone Is Not Peace

After victory we can have peace only when our whole integrated industrial organization is again differentiated into its individual aims. Our military officers will demobilize their organization which must be returned to industry. The greatest blessing of a democracy is the fact that it gives each individual an opportunity to pursue his life and happiness as he may choose. Autocracy on the other hand means the complete subordination of all individuals to the whims of the autocrat. By the pressure of war we have voluntarily integrated ourselves into a temporary autocracy and the conditions of peace cannot exist until the process of differentiation into individual units again is complete.

This is our next problem after victory and our diplomats must protect not only our future but also this critical period of wobbling transition.

GermanyHasAdvantage

STRIPPED to the bone, Germany's plotting against world peace has been dictated by commercial considerations. Likewise her ferocious conduct as a belligerent and the wanton destructiveness which marked her occupancy of French and Belgian soil, particularly the demolition of mines, of manufacturing plants and of such machinery as could not be carried off as loot to Germany have been part of a coldly calculated plan to cripple these nations for commercial competition in the years to come. Likewise the ruthless toll of merchant vessels taken by the German submarines has been a part of the same deliberate and destructive policy. Now with Germany defeated on the field of arms, the question arises, shall she be allowed to use her industrial power for her own interests while France, Belgium and other ravaged countries are devoting their energies towards repairing the damage she inflicted to gain commercial advantage? How shall German production and manpower be utilized to neutralize the effects of her economic crimes against her military opponents? Mr. Miller gives an original and interesting idea on this big question in the accompanying article.

We must consider the effect of releasing our vast armies back again into the labor market. The enemy's avowed purpose in devastating territory he occupied was to prevent commercial competition during the period of transition and it is only right that this purpose shall be defeated. When belligerancy ceases, the enemy manpower will all be at home ready to jump into commerce while we must transport our men from 4000 to 7000 miles. With Great Britain furnishing approximately 70 per cent of the transportation facilities it has taken us 18 months to put 2,000,000 men into France. This was done under the terror of disaster to allied arms and with the greatest precaution against any form of delay.

Bringing the Boys Home

After victory it is highly probable our ships alone must bring our men from Europe. Britain will engage practically her entire shipping facilities in restoring peace conditions in her vast empire. It is, therefore, by no means certain that we can restore our men to their peaceful opportunities as fast as our industries will need them. To effect this readjustment without hindrance and unhampered by the threat or fear of commercial war from our present enemies, our terms of peace must be our protection. We must demand and enforce "unconditional surrender." Humanitarianism most certainly should govern our treatment of our vanquished enemies; but no sense of false pity for the under-dog should allow the enemy to escape the full penalty of crime.

Germany prepared for conquest while we were trusting their peaceful purposes. They planned devastation and atrocities while we engaged in construction. Accordingly it is only fair that the situation should be arbitrarily reversed. SHOULD OUR ENEMIES NOT REPAIR THEIR DEVASTATIONS WHILE WE RETURN TO PEACE? We must be relieved of the threat of enemy commercial competition during the necessary time of industrial reconstruction. Can means be found which will guarantee that the enemy shall repair fully all damage done before he engages in any commerce whatever? Are any peace terms more essential than this? It is not inconsistent with decency or humanity to compel the enemy to repair and replace all they have wantonly or otherwise destroyed. It may be argued that no precedent exists for such terms, but is it not time for such a precedent, and would it not be a proper form of retribution for future ambitious nations to face?

Peace Terms To Protect Us

The existing enemy armies complete with all their home industries and boasted efficiency would make an admirable force of laborers under allied officers for the reconstruction of devastated territories of France, Belgium, Servia, Italy, Roumania, Poland, etc. Their entire armies together with all prisoners of war, interned enemies, etc., should be kept exclusively engaged in the restoration of every detail of devastated areas. They should be maintained and fed by the enemy people at home until the job is complete. In the restoration of every detail of homes, factories, mines, railways, and farms wantonly destroyed, the equivalent should be supplied from within the enemy countries. Where speed in reconstruction is wanted, allied contractors should be engaged to furnish such outside materials as are necessary, and it should be installed with enemy labor at enemy expense.

The Lens coal area was destroyed and the Briey mines, may be demolished to prevent their use in reconstruction, while the enemy corners

the commerce. Their equivalent product should be given to France and Belgium until they are in full operation industrially again. The same should be required as regard to food for the people of devastated areas until all agricultural lands are under cultivation and stocked. Some of the machines from looted factories can be returned but the deficit should be levied without stint upon enemy manufacturers, who would have profited had they won. The enemy boasted of efficiency covering the records of industrial plants. Let him prove this efficiency and at once furnish a complete inventory of all industrial equipment and let this be checked by allied military engineers. All not on their inventory shall be labelled loot and returned to devastated plants in occupied territory. If this is not enough, commandeer what is necessary. Under no condition should the enemy be permitted any foreign commerce or preparation for foreign commerce until industrial restitution is approved as complete by allied officers. These are industrial indemnities of first importance and are as essential to us as cash or territorial indemnities will be to our allies. These terms insist upon nothing in reprisal, no brutalizing revenge but are simple approximates to partial justice for the long series of crimes planned for 40 years and committed since 1914. During the completion of this part of the peace terms, the enemy's territory should be occupied by allied troops at the enemy's expense. Make him hurry and impress on him that he is not a superman whose destiny it is to rule the world.

Other Indemnities

Cash indemnities may permit of delayed payments, but should include the following minimum:

Cost of reconstruction previously or subsequently completed by allies.

The value of all personal property, food, etc., commandeered from occupied territory.

An annual cash rental of 20 per cent of the value of occupied territory.

A refund of all indemnities, taxes, etc., levied upon occupied territory.

A refund of indemnities levied on France in 1871 with interest at 5 per cent.

Territorial indemnities should be on broad lines and should cover the following transfers:

Alsace-Lorraine to France, and an adjustment of frontier that will interpose natural obstacles between Germany and France, as well as Belgium.

Italy, Servia, Roumania, Greece and Montenegro should have whatever they want, limited to their capacity properly to govern.

Germany must not receive her colonies back. Britain's record and genius for colonial administration should make her qualified to administer all outlying territory she holds. British colonies are as free to our trade as they are to Britain and we need not fear any change.

Thought should be given to Germany's future colonial ambition. It must not be forgotten that any self-governing territory is exposed to colonization, or recolonization if their government is unstable, or if they are not abreast with the time industrially and socially. By this analysis parts of Asia are exposed to colonization and it is possible that parts of South America need protection against some stealthy form of German recolonization.

Poland and other races should be independent where they can be self-governing and maintain peace with their neighbors.

Dardenelles and Bosphorus should be opened to the world.

Schleswig-Holstein should be returned to Denmark and the Keil canal internationalized.

Helgoland and all the enemies military and naval equipment should be transferred to the League of Nations with headquarters at Helgoland.

Moral indemnities are as essential as those previously mentioned in order that Germany may realize the enormity of her crimes. Germany's admission to the League of Nations should be dependent upon her moral rehabilitation accomplished by punishing in her own courts all those personally responsible for or those who abetted and counselled the crimes she has committed. Nothing Napoleon ever did assured him a place in history equal to his confinement on St. Helena. We want no Hohenzollern martyrs. Nor will we have them if Germany uses them and their kind to purge herself.

Organize Heat Treatment Society at Chicago

A. G. Henry, metallurgist of the Illinois Tool Works, 154 East Erie street, Chicago, is secretary-treasurer of the newly organized American Steel Treaters Society, which has been formed to promote the arts and sciences connected with heat treatment of steel by discussion of processes and equipment for practical and research work. This organization is the outcome of a local heat treating club and steps will be made to organize local branches in various steel centers.

T. E. Barker, production engineer for the Michle Printing Press & Mfg. Co., has been made president; A. F. Boissoneau, assistant manager of A. Finkl & Sons Co., is first vice president and E. J. Janitzky, metallurgical engineer for the Illinois Steel Co., is second vice president; A. G. Henry, metallurgist, Illinois Tool Works, is secretary-treasurer. The board of directors is composed of A. F. Boissoneau, A. G. Henry, E. J. Janitsky, Fred S. Crane of the Illinois Steel Co.; A. F. McFarland, metallurgist U. S. Ball Bearing Co.; Lew M. Rollins, chief engineer Armour Mechanical Co., and F. C. Lau of the Arrow Forging & Tool Works.

At the November meeting a paper on high temperature fire brick and refractory cements used in furnace linings will be read by L. G. McPhee of the Quigly Furnace Specialties Co. The society has begun the publication of a journal of its proceedings of which there will be 10 issues each year.

The Milwaukee works of the National Enameling & Stamping Co. have been awarded two contracts amounting to $60,000 for small boilers for army field service.

Refractories

Continues in Refractories, But Peace May Bring Revision of Orders

Pittsburgh, Nov. 12.—The approach of peace, accompanied by the cancellation of so much of the government construction program, finds reflection in the refractories trade and while as yet there has been no material slowing down in the demand, fears run strong that there will be a revision of some of the orders that have been placed. Demands for fire brick for use in connection with the production of iron and steel seem largely to have been covered and new business from this source is considerably smaller than it was recently.

Navy department requirements still are large, but while there have been no cancellations of orders in connection with the Neville island gun plant, manufacturers are expecting there will be now that work on this plant has been suspended. Because current supplies are none too large for wants, however, it is hoped to place some of the brick that may be released from the Neville island work in other channels, now getting insufficient supplies.

Peace presents a problem for the refractories industry quite as perplexing as that which confronts any other line of business. It probably means the halting of much new construction in the iron and steel trade, upon which manufacturers of brick depend for so large a part of their business. Prices are extremely high, but this is because of the shortage and exceedingly high cost of labor. Unless peace means more and cheaper labor, prices cannot be lowered much and the prices will have an important bearing on the size of after-the-war demands.

Current operations of the brick plants are running at about 75 per cent of capacity, the labor scarcity being intensified by the influenza epidemic.

Refractories

(Per 1000 f. o. b. works)

FIRE CLAY BRICK
(First Quality)

Pennsylvania	$45.00 to 55.00
Missouri-Illinois	55.00 to 65.00
Ohio	45.00 to 50.00
Kentucky	45.00 to 55.00
New England	55.00 to 65.00

FIRE CLAY BRICK
(Second Quality)

Pennsylvania	$40.00 to 50.00
Ohio	35.00
New England	48.00 to 58.00

SILICA BRICK

Pennsylvania	$50.00 to 60.00
Chicago	55.00 to 65.50
Birmingham	45.00 to 55.00

MAGNESITE BRICK
(Per Net Ton)

9 x 4½ x 2½	$105.00 to 115.00

CHROME BRICK
(Per Net Ton)

9 x 4½ x 2½	$130.00 to 140.00

BAUXITE BRICK
(Per Net Ton)

55 per cent	$ 40.00 base
76 per cent	100.00 base

Obituaries

SIR GEORGE HINGLEY, Bart., chairman of N. Hingley & Sons, Staffordshire, England, and one of the best known British iron masters, died recently. He inherited the title from his uncle, the late Sir Benjamin Hingley, whose valuable work as chairman of the Midland wages board had much to do with its successful career. Sir George Hingley Bart was deputy chairman of the wages board and in his own line, had much to do with the development of the South Staffordshire anchor industry. He likewise was chairman of Lloyds British Testing Co., which operated a number of proving houses in the district for certifying anchors and cables for the navy, the mercantile marine and foreign governments.

Clare D. Graham, 32, superintendent of the Dravosburg Dock & Construction Co., Dravosburg, Pa., died Oct. 30, at his home in Elizabeth, Pa., following a brief illness of influenza.

John J. Wheeler, president of the Standard Roofing Co., died at his home in Chicago, Nov. 7. He was born in Chicago and spent his entire life in that city.

Harold Tupper, assistant superintendent of the Ella Furnace Co., West Middlesex, Pa., died Nov. 2, at his home in Sharon, Pa. He was 26 years old and was a native of Sharon.

Allan R. Gantz, Pittsburgh traffic manager for the Standard Parts Co., Cleveland, died at the West Penn hospital, Pittsburgh, Nov. 3, of pneumonia. He was 33 years old.

Alfred R. Jones, president of the Pusey & Jones Co., Wilmington, Del., has succumbed to pneumonia. He was about 50 years of age and had been the head of the undertaking many years.

Frank W. Farry, aged 60, president of the Ohio Injector Co., Chicago, died at his home there recently. He removed to Chicago from Akron, O., in April, 1894, when he organized the Ohio Injector Co. of Illinois.

Julian J. Washburn, Batavia, N. Y., vice president of the Wiard Plow Co., died Oct. 29 at his home in that city, aged 76. Mr. Washburn was former president of the village of Batavia, and was a veteran of the civil war.

James Douglass, who for the past 10 years has been general furnace foreman at the Lucy plant of the Carnegie Steel Co., died at his home in Pittsburgh, Nov. 8. He had been with the Carnegie company for almost 30 years.

Burton N. Frost, aged 35, and E. Theodore Frost, aged 33, both of whom were associated with their father, W. G. Frost of Smith's Falls, Ont., in the Smith's Falls Malleable Castings Co., died on Nov. 4, from influenza.

William P. McCord, son of the late William P. McCord, and associated with his father in Post & McCord, iron and steel constructors, New York, died at Nancy, France, Oct. 12, of pneumonia. He was engaged in Y. M. C. A. work overseas. He was 40 years of age.

Donald Stevenson, a civil and construction engineer for the Jones & Laughlin Steel Co., died at his home in Pittsburgh, Oct. 31. He was 38 years old and was born and lived all his life in Pittsburgh. He was a member of the Engineers' Society of Western Pennsylvania.

L. R. Gulley, general manager of the Burr Co., founders and machinists, Champaign, Ill., died Oct. 22 from pneumonia following an attack of influenza. Mr. Gulley was 32 years of age and had been associated with the Burr company since his graduation from the University of Illinois in 1910.

William M. Husbands, one of the founders and vice president of the Standard Metal Co., Indianapolis, died at his home in that city from hemorrhage of the throat. He was one of the best known traveling salesmen in the metal trades in Indiana, having been for many years a salesman for Tanner & Co., for 42 years.

George W. Wilson, aged 50, for 25 years a prominent coal and coke man of Pittsburgh, died at his home in Crafton, Pa., Sept. 30. For the past six years Mr. Wilson had been with the J. H. Hillman Co., Pittsburgh, as manager of the coal department. Prior to that he had been with the James Pierpont Sons Coal Co., Philadelphia, and the Iron City Coal & Coke Co., Pittsburgh.

Caleb William Roberts, Wollaston Hall, Stowbridge, Eng., principal member of the firm of Roberts & Cooper, which operate several iron works in the Black country died recently as a result of an accident at the Bromley Iron Works, where he was superintending some boiler-changing operations. Mr. Roberts practically has had entire charge of the firm's operations since the death of his partner, Ebenezer Cooper.

Enoch Earle, formerly a member of the firm of P. Blaisdell & Co., makers of machinists' tools, Worcester, Mass., now a part of the Whitcomb & Blaisdell Machine Tool Co. of that city, died at his home there Sept. 24, aged 75 years. He was one of the best known men connected with the machine tool industry in Worcester, having been prominent in public affairs and the Masonic fraternity.

Charles Strickler Bygate, president of the Charles S. Bygate Co., president of the Pittsburgh District Coal Jobbers' association and connected in an executive capacity with several coal producing interests died at his home in Pittsburgh, Nov. 3. Mr. Bygate, who was 37 years old, had been a resident of Pittsburgh for about 25 years, and was one of the best known men in the coal trade in western Pennsylvania. He was a graduate of Mt. Union college.

Charles Ridgely Hanscom, who built the ocean-going steamers MINNESOTA and DAKOTA, at Groton, Conn., died Oct. 31 at his home in New London, Conn., aged 69. Mr. Hanscom was born in Portsmouth, N. H. He served as draftsman and naval expert in the United States navy department, Washington, in 1880 and 1890. For the next six years he was general superintendent of the Bath Iron Works, Maine, engaged in building government and merchant vessels. He later became president of the Eastern Shipbuilding Co.

Randolph Hersey, a pioneer of the iron trade of Montreal, and formerly a member of the Pillow & Hersey Mfg. Co., of that city, died Oct. 6 at the age of 89. He was born at Canton, Maine, and came to Montreal in 1852, learning the manufacture of cut nails with Holland & Dunn, and after several years became a partner in the business. He subsequently joined the firm of Pillow, Hersey & Co. which, in 1887, was incorporated as the Pillow & Hersey Mfg. Co., with Mr. Hersey as president. In 1903 the company was sold to the National Rolling Mills Co. and Mr. Hersey retired from active business.

W. F. Cowan, aged 88, president of the Standard Bank of Canada and pioneer manufacturer occurred at Oshawa, Ont., Oct. 28, of heart failure. Born in Tyrone county, Ireland, he located in Canada at an early age and about 1862 became interested in the A. S. Whiting Mfg. Co., Oshawa, manufacturer of farm implements. In 1872, he organized the Ontario Malleable Iron Co., of which he became president, retaining the position until his death. Some years after the formation of the Ontario Malleable company, he established Filtings, Ltd., of which he also was president. Mr. Cowan was prominent in financial affairs. His son, Fred W. Cowan, now is managing the Ontario Malleable Iron Co.

Willard E. Case who was internationally prominent by reason of his researches into electro-chemistry, died at his home in Auburn, N. Y., Oct. 27, of Spanish influenza. Mr. Case, who was born in Auburn in 1857 was descended on his mother's side from John Fitch, pioneer inventor in steam navigation, while on his paternal side he came from a line of men who were pioneers in the early scientific achievements in America. When 29 years of age, he read a paper at London on "A New Means of Converting Heat Energy Into Electrical Energy," which established him as an authority both abroad and at home. Mr. Case's laboratories at Auburn now are being used by a force of electro-chemists in government work.

Instructs Jobbers On New Circular

Secretary Hirsch of Priorities Committee Explains Exact Procedure to be Followed by Middlemen Under Supplement No. 2 to Circular No. 4—Method for the Replacement of Stocks Is Set Forth.

WASHINGTON, Nov. 12.—Instructions to jobbers of iron and steel as to how to proceed in following the restrictions and curtailments ordered by the war industries board, is disclosed in a circular letter being mailed to the jobber by Maurice Hirsch, secretary of the priorities committee. This circular, which is known as Form Letter No. 29, also carried a list of the various special industry circulars issued by the priorities committee up to the first of the present month. The letter from Mr. Hirsch is as follows:

"1. Read carefully section 8 of supplement No. 2, subdivisions (s), (af), and (ag). Note that (s) includes only manufactured or finished products, while (af) and (ag) include only rolled or drawn products.

"2. Pledge as specified in section 9D, subdivision (a) must be filled with director of steel supply, war industries board.

"3. A pledge in the same form must be filed with the priorities committee, war industries board.

"4. Require pledge from all customers who purchase for resale, whether they are jobbers or retailers. The form of pledge is given in section 9D, subdivision (b). Do not ask any customer to file this particular pledge more than once. It is not necessary that a pledge be required from any customer unless he is purchasing for resale.

"5. The pledges referred to in the three paragraphs just preceding, and all other pledges and affidavits mentioned in this circular, may be written on your own stationery. No blank forms are provided by this committee.

"6. File a monthly report before the fifth of each month with the director of steel supply, as provided in section 9D, subdivision (c). Report shipments only of such products as are mentioned in section 8, subdivision (af). Do not make any report for products mentioned in subdivision (s).

"7. Require from customers (other than officers ordering directly for the United States war department, navy department, Emergency Fleet corporation, bureau of industrial housing and transportation, or United States housing corporation) ordering stock which you expect to replace on an A-6 rating, a signed certification (not a sworn affidavit) as to the purpose for which the material is to be used. Such a purpose must be entitled to an A-6 rating or better. The form of certification is given in section 9D, subdivision (c). Please note that only products of the kind mentioned in subdivision (af) or section 8 may be replaced by the jobber on an automatic A-6 rating.

"8. Preserve the file of certifications which accompany orders mentioned in the preceding paragraph.

"9. Make shipments to customers other than those mentioned in paragraph seven above, only when they are entitled to 'preference treatment,' the basis for which 'preference treatment' shall be sections 5, 7B, 8, 8A and 9E of supplement No. 2, and all additions or amendments thereto. Your orders for replacement of stock sold on these conditions are entitled to an automatic B-4 rating, whether the stock sold falls within the provisions of subdivision (s) or (af).

"10. In ordering materials to replace your stock there are two possible courses: First—you may attach to each order for replacement of stock the affidavit set forth in section 8. In filling out this affidavit refer to section 8, subdivision (s) or (af), as the situation may demand, if your order is accompanied by a B-4 rating; but refer only to section 8, subdivision (ag) if your order is accompanied by an A-6 rating.

"Or, as an alternative you may file with each source of supply, the affidavit set forth in section 9B; and thereafter, attach to orders placed with such sources of supply, the certification (not a sworn affidavit) set forth in section 9B. In filling out this certification refer to section 8, subdivision (s) or (af), as the situation may demand, if your order is accompanied by a B-4 rating; but refer only to section 8, subdivision (ag) if your order is accompanied by an A-6 rating.

"11. The A-6 rating may be used on orders entitled thereto, for stock to replace shipments made by you since Oct. 15, 1918.

"12. In cases where you are handling products which are controlled by special industry circulars (such for example as ball bearings, stoves, etc.) your relations with the manufacturer will be modified by the conditions of the special circular. A list of the special circulars issued up to date is attached. Additional circulars will be issued from time to time.

"13. Jobbers of oil-well supplies mentioned in subdivision (u) of section 8 are allowed a B-2 rating in obtaining stocks, by the provisions of that subdivision. The monthly replacement limitation does not apply."

SPECIAL INDUSTRY CIRCULARS ISSUED BY THE PRIORITIES COMMITTEE UP TO NOV. 1, 1918

Circular No. 6 Hollow Tile
Circular No. 7 Paving Brick.
Circular No. 8 Cement.
Circular No. 9 Lime.
Circular No. 10 Boots and Shoes.
Circular No. 11 Motor Trucks.
Circular No. 12 Washing Machines.
Circular No. 13 Paper, Pulp and Print Rollers.
Circular No. 14 Horse-drawn Spring Vehicles.
Circular No. 15 Linoleum.
Circular No. 17 Burial Goods.
Circular No. 18 Clothes Wringers.
Circular No. 19 Ball and Roller Bearings.
Circular No. 22 Tobacco Manufacturers.
Circular No. 23 Electrical Equipment and Supplies.
Circular No. 24 Rubber Manufacturers.
Circular No. 25 Corset Manufacturers.
Circular No. 26 Boiler and Radiator Industry.
Circular No. 27 Gas Heaters and Appliances.
Circular No. 28 Metal Beds, Metal Springs for Bunks, etc.
Circular No. 29 Pocket Knives.
Circular No. 30 Stoves and Ranges.
Circular No. 31 Household Utensils (Enamelware and Tin Plate)
Circular No. 32 Wire Bound Boxes.
Circular No. 33 Sporting Goods.
Circular No. 34 Composition Roofing, Rag—Felt Floor Covering and Building Board.
Circular No. 35 Agricultural Implements and Farm Operating Equipment.
Circular No. 36 Clocks and Watches.
Circular No. 27 Bicycles and Motorcycles.
Circular No. 38 Fire Fighting and Fire Protection Apparatus.
Circular No. 39 Talking Machines.
Circular No. 40 Typewriters.
Circular No. 41 Elevators.
Circular No. 42 Baby Carriages.
Circular No. 43 Cotton Gins.
Circular No. 44 Refrigerators.
Circular No. 45 Electric Energy.
Circular No. 46 Talking Machine Needles.
Circular No. 47 Hand Stamping and Marking Devices.
Circular No. 48 Oil and Gasoline Heating and Cooking Appliances.
Circular No. 49 Adding and Calculating Machine Industry.
Circular No. 50 Saddlery and Harness.
Circular No. 51 Steel Pens.
Circular No. 52 Cooperage.
Circular No. 53 Electric Equipment and Supply Manufacture.
Circular No. 54 Lumber Industry.
Circular No. 55 Road Making Machines.
Circular No. 56 Steel Wire Braid for Pneumatic Tires

Vast Quantities of Potash Reclaimable at Furnaces

Washington, Nov. 12.—In the second of a series of articles relating to the war minerals investigation undertaken by the bureau of mines, department of the interior, A. W. Stockett gives an interesting account on the potash situation. He discusses results obtained in recovering potash from the dust of cement mills and ore in blast furnaces. He says:

"The recovery of potash as a by-product in the manufacture of pig iron was first investigated by R. G. Wysor at the plant of the Bethlehem Steel Co. Dust settling in the stove and boiler passes was collected and was found to contain nearly 10 per cent of potash. Investigation showed that the potash recovered from this dust was only a small proportion of the total in the charge, being less than 2 per cent, and that 67 per cent of the potash was lost in the primary washers and in the stack gases. Experiments with electrical precipitation proved practically all of the dust could be precipitated successfully. A plant for collecting the dust is now being erected at a 400-ton furnace at the

Bethlehem Steel Co.'s plant at Lebanon, Pa., and another plant is to be built in Alabama at an early date. Mr. Wysor states, 'I venture to predict that in the future dry cleaning will be adopted in many blast furnace plants and that many thousands of tons of potash, hitherto wasted, will be reclaimed.'

"An investigation is being made to determine the total amount of potash lost in the dust of all furnaces in the United States, but the figures are not yet available. Probably, however, the amount recoverable will exceed the total requirements of the country, 250,000 tons. Without taking into account the indirect advantage of cleaner gas for use in the stoves and gas engines, it may be safely stated that potash can be obtained from this source at a price that will enable it to compete successfully against the German potash under all conditions."

October Ship Output Shatters All Records

WASHINGTON, Nov. 12.—Despite the epidemic that threatened to delay the shipbuilding program all shipbuilding records for any country were broken by the total deliveries of completed new ships to the shipping board during October. Although about one-third of the country's shipbuilders were incapacitated by influenza, the previous record-breaking total for September was surpassed by nearly 50,000 deadweight tons. There were added to the American merchant marine in October 79 completed ships of 415,908 deadweight tons.

The deliveries comprised 47 steel ships of 301,208 deadweight tons, 30 wood ships of 107,200 deadweight tons and two composite ships of 7500 deadweight tons. From American shipyards came the unprecedented total of 398,108 deadweight tons. Japanese shipyards delivered two steel ships of 17,808 deadweight tons. The American total exceeds by 68,980 deadweight tons the output of ocean-going vessels in this country in 1914 and 1915, and also surpasses the pre-war record in American shipbuilding, the total for 1916, by 112,553 deadweight tons. It also surpasses the British record for any month by 162,397 deadweight tons.

Once more the Pacific coast led all sections of the country in shipbuilding, deliveries from California, Washington and Oregon totaling 30 vessels of 190,400 deadweight tons. From the Atlantic coast yards there were delivered 17 vessels of 102,000 deadweight tons; from the Great Lakes shipyards 21 vessels of 73,000 deadweight tons, and from the Gulf states came nine vessels of 33,200 tons.

The October deliveries bring the total of completed new ships in 1918 up to 2,386,835 deadweight tons. Since the date of the first delivery, Aug. 30, 1917, there have been completed and delivered 487 ocean-going vessels totaling 2,793,510 deadweight tons. The accompanying table gives further details of October deliveries according to type and locality.

Details of October Ship Deliveries

In Deadweight Tons

	Wood		Contract steel		Requisitioned Steel		Composite		Total	
	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage
Atlantic coast	8	28,000	2	18,400	7	55,600	..	.....	17	102,000
Pacific coast	14	50,000	8	67,100	7	69,300	1	4,000	30	190,400
Great Lakes	..	.....	18	63,100	3	9,900	..	.....	21	73,000
Gulf	8	29,200	..	.....	..	.....	1	3,500	9	33,200
Japan	..	.....	..	.....	..	.....	..	.....	2	17,808
	30	107,200	28	148,600	17	134,800	2	7,500	79	415,908

Licenses for Importations of Chrome Ore Revoked

Washington, Nov. 12.—All outstanding licenses for the importation of chrome ore, except as to shipment from Cuba, Canada and Brazil have been revoked by the war trade board effective yesterday. Hereafter no licenses to import chrome ore, except from the three countries named, will be issued by the board.

Decreased domestic consumption of chromite, 35,000 tons less than had been anticipated, has been due chiefly to the changes made in industrial programs by the regulation of the war industries board, notably in the case of automobile manufacturers who have been large consumers of ferrochrome. This is the gist of a telegram from Hugh W. Sanford, chief of the ferroalloys section of the war industries board to Albert Burch, the bureau of mines representative at San Francisco.

According to Mr. Sanford, the war industries board has not guaranteed any sales of chromite nor has it guaranteed any prices. It has, however, urged buyers to stock up with chrome ore and has suggested the price be the average price which prevailed during the past summer. It is pointed out, by Mr. Sanford, that many of the users of high grade ores already have 10 to 12 months' supply on hand.

Changes Are Announced by Ordnance Dept.

Washington, Nov. 12.—A recent announcement issued by the ordnance department of the United States army, states that the production division as a separate organization has been abolished. Its functions have been distributed among the other divisions of the ordnance department. All functions formerly performed by the production division in Washington have been transferred to the office of the chief of ordnance under the direct supervision of the appropriate special assistants to the chief of ordnance. For example, the cannon section, which has charge of gun and gun carriage production, reports to the assistant to the chief of ordnance in charge of cannons, carriages, their appurtenances and accessories. Similarly, the small arms section, responsible for the production of small, automatic and side arms, reports to the assistant in charge of automatic arms, rifles and their ammunition.

Functions, previously performed by the production division in the field are transferred to the district ordnance chiefs. Twelve of these are located in as many cities as follows: Boston, Bridgeport, Conn., New York, Rochester, N. Y., Philadelphia, Pittsburgh, Cleveland, Detroit, Cincinnati, Chicago, St. Louis and Toronto, Ont.

The service function sections of the production division, such as administration, industrial service, plant and miscellaneous, as well as the general activities of the district offices are under the jurisdiction of Brig. Gen. Guy E. Tripp, special assistant to chief of ordnance, Maj. Gen. C. C. Williams. During the latter's absence abroad, Brig. Gen. W. S. Peirce will discharge the duties of the office of the chief of ordnance.

Adopt New Procedure for Export Licenses

Washirgton, Nov. 12.—In a new ruling the war industries board and the war trade board announce a revised procedure with respect to export licenses, priority certificates and permits of the director of steel supply for the exportation of commodities to any destination. This revised ruling supersedes all former rulings on this subject.

The only change in the procedure as announced Oct. 9 is that in paragraph 5, the words "are on the export conservation list of the war trade board and" have been eliminated. Priority classification C of the war industries board now will be awarded to all articles on which priorities are issued which are covered by export licenses issued on and after Oct. 16, 1918, whether the article may be on the export conservation list of the war trade board or not. The rulings of Oct. 9, together with the schedule of products affected were published in THE IRON TRADE REVIEW Oct. 10, page 823.

Men of the Iron Trade

Personal News of a Business Character Regarding the Men of Affairs of the Industry

AMBROSE NEVIN DIEHL, who recently was made works superintendent of the Carnegie Steel Co., to succeed the late Edward J. Hamilton, has been since May, 1917, assistant to William Whigham, vice president of the Carnegie Steel Co., with offices in Pittsburgh. Prior to that time Mr. Diehl was superintendent of blast furnaces at the Duquesne Steel Works. He was born in York, Pa., and prepared for college at the York Collegiate institute, from which he was graduated in 1894. He entered Pennsylvania State university and was graduated in 1898 with the degree of bachelor of science. After serving as chemist in the Pennsylvania state experimental station, he, in 1900 was appointed assistant superintendent of blast furnaces at the Duquesne works and in one year was promoted to be superintendent in which capacity he served for 16 years, until being transferred to Pittsburgh as assistant to Vice President Whigham. It will be remembered that Mr. Diehl presented an able and illuminating paper at the Cleveland meeting of the American Iron and Steel institute in October, 1915, its title being "Modern Methods of Burning Blast Furnace Gas in Stoves and Boilers."

Robert L. Ahles, president of the Sweet Steel Co., Williamsport, Pa., has entered Red Cross service and leaves for Europe soon.

W. J. Baird of the W. J. Baird Machinery Co., is head of the B. & H. Machine Co., Detroit, to manufacture screw machine products.

F. H. Rosencrants has been made inspector of mechanical equipment for the American International Shipbuilding Corp., Hog Island, Philadelphia.

Charles V. Eads, formerly associated with the Sarco Co., Chicago, is now connected with the Lehon Co. and will have headquarters at Chicago.

N. B. Folsom, treasurer of the Brier Hill Steel Co., Youngstown, O., who has been ill from an attack of fever, has recovered.

S. H. Squier Jr., has been placed in charge of the new Chicago office at 604 Fisher building of the Milwaukee Electric Crane & Mfg. Co., Milwaukee.

E. C. Carroll, Chicago sales representative of the National Carbon Co., has resigned and entered the production department of the Globe Seamless Tube Co., at Milwaukee.

H. F. Post has been placed in charge of the recently opened sales office at 604 Swetland building, Cleveland of the Underfeed Stoker Co. of America, Chicago.

L. L. Carney, formerly eastern salesman for the Miner-Morse Corp., Erie, Pa., has joined the sales force of the Cleveland office of that corporation.

M. L. McGraw, formerly superintendent of the Lakeside Foundry, Detroit, has been appointed general superintendent of the Gray Foundry, Inc., Poultney, Vt.

Roger C. Sullivan was recently elected chairman of the board of directors of the Independent Pneumatic Tool Co., Chicago, to succeed the late John P. Hopkins.

W. F. Furman, formerly with the American Locomotive Co., New York, has been placed in charge of the New York office at 30 Church street, of the Le Moyne Steel Co., Pittsburgh.

E. I. Dennis, who has been associated with the Ferguson Steel & Iron Co., Buffalo, for a long time, has been appointed manager of the Buffalo branch office of the Latrobe Electric Steel Co., Latrobe, Pa.

John G. Shirley has been made production manager of the S. K. F. Ball Bearing Co., Hartford, Conn. Formerly he was assistant works manager of the Gilbert & Barker Mfg. Co., Springfield, Mass.

Albert P. Leonard, formerly assistant chief engineer of the Honolulu Iron Works Co., New York, now is with the engineering division of the bureau of aircraft production, Dayton.

W. L. Romaine, secretary of the Badger-Packard Machinery Co., Milwaukee, machine tool dealer and jobber, has been appointed director of the oil conservation section of the Wisconsin state fuel administration.

E. W. Saunders has become affiliated with the Cleveland office of the Federal Tool & Alloy Steel Corp., 12 Platt street, New York. His territory will comprise Ohio and the city of Detroit.

Richmond Nicholas, formerly resident manager for Hickman, Williams & Co., at Chicago, has been made a vice president and is succeeded as manager of the Chicago office by A. J. Johnston of the Chicago sales force.

J. E. N. Olsen who has been affiliated with the Republic Iron & Steel Co., since its organization, the last four years, as local auditor at the Moline, Ill., works, has been appointed local auditor for the Sligo Iron & Steel Co., Connellsville, Pa.

Daniel Willard, head of the Baltimore & Ohio railroad, as a colonel of engineers, has been placed in charge of all railroads in France, both American and French. For a while, Mr. Willard served as chairman of the war industries board.

C. D. Morton, sales engineer for the Page Steel & Wire Co., Adrian, Mich., has left that position to become captain in the general engineer depot, Washington. Charles E. Goodnow, formerly with the American Steel & Wire Co. succeeds him.

Walter E. Wollheim resigned from the engineering department of the Nathan Mfg. Co., Flushing, L. I., recently to become president and mechanical engineer of the Alloy Foundry & Machine Corp., New Rochelle, N. Y.

Alexander Vallance, who was assistant professor of experimental engineering in the Georgia School of Technology, Atlanta, Ga., now is affiliated with the shell department of the American Machine & Mfg. Co., that city.

J. B. Hamilton, secretary and treasurer of the Wickes Machinery Co., Jersey City, N. J., resigned recently to become president of the Hamilton Machinery Co., that city, dealing in high grade machine tools, motors and other equipment.

W. G. Lake is president of the Marion Die, Tool & Machine Co., Marion, O., which has been taken over by Mt. Vernon, O., interests. He succeeds E. W. Owen. The business will be conducted under the same name.

George D. Reynolds, who resigned recently as designer of machines at the Edgewood arsenal, Baltimore, has become works manager of the Quickwork Co., St. Marys, O., manufacturer of rotary shears, sheet and plate metal working machinery, etc.

L. G. Buske, for 28 years connected with the Shaw Electric Crane Co., Muskegon, Mich., as erecting engineer and service man, has become identified with the Champion Engineering Co., Kenton, O., engineers and manufacturers of the electric cranes.

C. E. Hildreth, president of the Whitcomb-Blaisdell Machine Tool Co., delivered an informal talk on "The Future" at the regular monthly meeting of the New England Foundrymen's association held at the Exchange club, Boston, Wednesday evening, Nov. 13.

R. E. Priest, formerly president and general manager of the Detroit Bolt & Hardware Co., has sold out his interest in that company and has become identified with the Pressed Metal Radiator Co., Pittsburgh, in the capacity of assistant to the president.

A. M. Brown has been made Philadelphia district manager of sales for the Chicago Pneumatic Tool Co., Chicago. He succeeds G. A. Barden, who remains in Philadelphia as sales representative of the company. Mr. Brown has been located in the company's New York office as assistant manager of the compressor sales division.

Men of the Iron Trade

Personal News of a Business Character Regarding the Men of Affairs of the Industry

WALTER COE MACNEILLE, comptroller of the International Silver Co., Meriden, Conn., has resigned to become comptroller and first assistant treasurer of the American Rolling Mill Co., Middletown, O., on Dec. 1. Mr. MacNeille is an eastern man, born in Massachusetts, and has had a wide experience in accounting, financing and executive responsibilities. For seven years he was connected with Price, Waterhouse & Co., New York. He succeeds N. W. Collord as active head of the treasury accounting division, as now constituted in the company's organization. Mr. Collord presented his resignation at the recent annual meeting, at which George M. Verity was re-elected president and general manager; J. H. Frantz, first vice president; Charles R. Hook, vice president and assistant general manager; R. C. Phillips, secretary and treasurer; and C. W. Davis, assistant treasurer. Mr. Collord will become an active partner in a growing manufacturing proposition in Detroit, in which he has had an interest for some time. It is understood that he will become the directing head of the concern which is engaged largely in war work at the present time.

William F. Cassidy, formerly foreman of the plant of the Ohio Steel Foundry Co., Springfield, O., has been appointed general superintendent of the Aetna Steel Castings Co.'s plant, Cleveland.

Matthew C. Ditmann, vice president and treasurer of the American Bronze Corp., Berwyn, Pa., was appointed general manager recently by the board of directors. He has been affiliated with the corporation for nine years. E. G. Anderson, sales manager, has been promoted to the position of advertising manager.

F. L. Atwood, former factory manager of the Remy Electric division of the United Motors Corp., now is vice president and director of production of the Midwest Engine Co., which firm comprises the Lyons-Atlas Engine Co., Indianapolis, and the Hill Pump Co., Anderson, Ind. He is succeeded by E. F. Creager, formerly assistant works manager.

J. W. Weinland, who formerly was district manager at Chicago for the Liberty Steel Products Co., New York, has been appointed assistant to the president of that company, and at the same time, he will serve as assistant to the president of the Davis Brake Beam Co., with office in the Woolworth building, New York. S. W. Mudgley, formerly in charge of the railroad department of the Liberty Steel Products Co., at Chicago, succeeds Mr. Weinland as Chicago district manager, with office in the McCormick building.

Walter C. Mack was elected president of the Hoover Steel Ball Co., Ann Arbor, Mich., at the recent annual meeting of stockholders, to fill the vacancy caused by the death of Leander J. Hoover on Sept. 23. F. A. Stivers was made vice president while M. J. Fritz was elected treasurer and H. D. Runciman, secretary and general manager. William Arnold Jr., now is assistant secretary.

J. A. Fries, electrical engineer of the Tennessee Coal, Iron & Railroad Co., Ensley, Ala., will present a paper at the November meeting of the Pittsburgh section of the Association of Iron and Steel Electrical Engineers on "Sixty-Cycle Versus Twenty-five Cycle Power for Steel Mills". The meeting will be held at the Chatham hotel, Pittsburgh, Saturday evening, Nov. 23.

Clement A. Hardy, who for many years was sales manager of the Whiting Foundry Equipment Co., Harvey, Ill., resigned recently to establish his own office in the Railway Exchange building, Chicago. Mr. Hardy is engaged in consulting and contracting engineering work for foundries and machine shops, with particular reference to the installation of tools and equipment.

E. P. Welles, president of the Charles H. Besly Co., Chicago, manufacturer of forged taps, etc., has charge of the drive for new members being conducted by the Machinery club, of Chicago. He has worked out a system along military lines. A member who secures five new members will be designated an ace and given a prize. Provision is made for double, triple and quadruple aces.

Frank A. Robbins, Des Moines, Iowa, has accepted the position of chief electrical engineer of the Superior Water, Light & Power Co., Superior, Wis., succeeding P. C. Miller. Mr. Robbins formerly was connected with the General Electric and Westinghouse companies and later became professor of electrical engineering at Iowa State college, and then joined the Des Moines Electric Co. as electrical engineer.

Charles Gilbert, secretary of the A. Gilbert & Sons Brass Foundry Co., St. Louis, has been elected president of the recently organized St. Louis Munitions Corp., which comprises a number of St. Louis companies engaged in the manufacture of munitions. Elmer Leschen, secretary of the General Machinery Mfg. Co., was made secretary while W. T. Mellow, secretary and treasurer of the Liberty Foundry Co., was elected treasurer.

P. F. Finnegan, who has been actively connected with the railroad administration at Washington for the past six months, as assistant in the division of traffic, has returned to the Baltimore & Ohio railroad as traffic manager of its western lines. Before going with the railroad administration, Mr. Finnegan held the position of general freight agent. In addition to his duties as traffic manager of western lines, he will be chairman of the Cincinnati district freight committee.

E. L. Staats, formerly connected with the Lehigh Valley railroad, has been assigned by the auditor of the railroad administration as supervising cost accountant at Pittsburgh in connection with the freight car contracts held by builders in the Pittsburgh district. Mr. Staats will supervise costs at the plants of the Pressed Steel Car Co. at McKees Rocks and the north side of Pittsburgh, the Standard Steel Car Co. plant at Butler, Pa., and at the Cambria Steel Co. plant at Johnstown, Pa. These companies are to build 18,000 cars on a cost plus basis.

Ambrose Swasey, president of the Warner & Swasey Co., Cleveland, has given the Engineering Foundation $100,000 for the endowment of engineering research. This is in addition to his gift of $200,000 in 1915, which made possible the establishment of Engineering Foundation by the United Engineering society, representing the American Society of Civil Engineers, the American Institute of Mining Engineers, the American Society of Mechanical Engineers and the American Institute of Electrical Engineers. Mr. Swasey is a past president of the American Society of Mechanical Engineers. His latest gift was made to express his appreciation of the war services rendered to the country by the United Engineering society and the Engineering Foundation.

Charles J. Brown, formerly superintendent of the blast furnaces of the Donora, Pa., works of the American Steel & Wire Co., has been appointed assistant general superintendent of the works, succeeding Charles H. Williams, now superintendent of the Baldt works of the Penn Seaboard Steel Corp., at New Castle, Del. Mr. Brown, after graduating from the Case School of Applied Science, Cleveland, entered blast furnace work at Duluth. Later he took up similar work at the Central works of the American Steel & Wire Co., at Cleveland, and subsequently became superintendent of blast furnaces at the Schoenberger works of the company, Pittsburgh. About two years ago he was transferred to the Donora plant. C. S. Forkum who has been assistant superintendent of the blast furnaces at the Central works of the American Steel & Wire Co., succeeds Mr. Brown.

Iron and Steel Financial News

Up-to-the-Minute Fact and Comment Collected and Sifted For Busy Readers

Sound Basic Conditions Give Confidence

AN assistant secretary of navy was asked the other day, "what will happen to business when the war ends?" He replied, "I don't know what will happen to business, but I do know that the navy is going ahead with its present program as if nothing had happened." Other responsible people talk the same way. Chairman Baruch of the war industries board has stated the coming of peace would not result in the immediate cancellation of war supply contracts, but that such contracts would be cancelled gradually, and as raw material became available, it would be allocated by the board in supplying civilian and export demands. In other quarters it is said the board has a plan for allocating cancellations, much as the original orders were placed. We are now a creditor country. We have loaned upwards of $10,000,000,000 to our allies. We have undertaken the task of keeping the world open to progress and having put our hand to the task cannot lift it. We must assist in the policing of Europe. Thousands of soldiers will be needed in the central countries, in Russia, perhaps in China. Yet, until a few months ago we were supplied with guns and airplanes by the French and British. Our military program will proceed at least in part.

World's Stocks Are Depleted

The world is starved for commodities of all kinds. Food will be needed as never before; our food administration has promised to help feed the populations of Central Europe, as well as those of our allies. The farmers will continue prosperous and their buying power sustained. The lack of farm labor is such in the west that the farmer boys back from the war should be absorbed readily. Metals of all kinds have been withheld from less essential uses in this country and from essential uses in neutral countries. Shelves are bare all over the world. In this country we were just reaching a stage where the retail consumer was beginning to feel the pinch of commodity shortage, but the manufacturers of these commodities felt the shortage of raw materials some time since. Somewhere is a gap between manufacturer and consumer, that will have to be filled. Big industries, such as the automobile industry, are crouched on the line, waiting the starter's shot. Such industries will take up much of the slack as it is passed out by the war industries board. The railroads need a large amount of rolling stock and general repairs. The shipping program will continue to absorb much steel and other material and labor for many months. Some war industries will be closed down and their labor released, but the labor situation is such that many thousands can be absorbed easily. For example, the brass industry, now working only on urgent government orders, is able to operate only at about 50 per cent of capacity due to lack of labor. Much equipment is standing idle for lack of men, yet the government is calling anxiously for material. Meanwhile, scores of industries, dependent upon supplies of brass and copper products are waiting for the bars to be let down. The same situation exists in many other industries.

The Psychology of Prices

Temporarily, some buyers of commodities will hold back, against possibility of a "break" in prices. On the other hand, there are thousands of manufacturers over the country who have been deprived of their requirements of raw material and who are anxious to get their plants operating and their old trade back. They will not wait too long to take advantage of a possible declining market and meanwhile take a chance of losing their trade to a more far sighted competitor. After all, price declines probably will be gradual, because prices cannot be reduced drastically without affecting labor sharply. The price advances have reached almost every item of living, even to real estate and rents in localities untouched by war booms. This general inflation will tend to make the readjustment of wages more difficult. The present buying power of the public, which in the last analysis determines prosperity, will be little affected for a long time to come, for the transition from war to peace conditions will be gradual. By the time the transition is consummated, peace business should be at its normal stride. Only those people who are "bearish on America" can be really pessimistic at this time, when the shadow of the world's worst war is just being dispelled by the sunlight of peace. The requisite for *prosperous* business conditions after the war ends, is *confidence*.

Midvale Net, $11,590,601 After War Taxes

After meeting interest charges and allowing for federal taxes the Midvale Steel & Ordnance Co. reports net profits of $7,793,627 for the third quarter of 1918. This compares with $8,545,443 for the three months ended June 30, 1918 and $8,039,285 for the third quarter, 1917. Net earnings for the third quarter aggregated $11,590,601, this being the amount left after the estimated war tax had been deducted. Just what this amounted to, is not given in the statement. The amount set aside for depreciation was $3,024,162, an increase of $1,642,014 over the corresponding reservation in the same quarter last year.

Comparative income accounts for the third quarter as well as for the nine months ended Sept. 30, follows:

FOR THE THIRD QUARTERS

	1918	1917
Net earnings	*$11,590,601	†$18,045,082
Federal taxes	.....	7,817,964
Interest	772,812	805,685
Depreciation, etc.	3,024,162	1,382,148
Net profits	7,793,627	8,039,285

FOR MONTHS ENDED SEPT. 30

Net earnings	*33,474,398	†52,870,955
Federal taxes	.....	22,139,582
Interest	2,351,020	2,436,662
Depreciation, etc.	6,983,967	4,941,245
Net profit	24,139,411	23,353,466

*After provision for all taxes. †Before war taxes.

The profit in the September quarter was equivalent to $3.89 per share of stock as compared with $4.27 in the preceding three months. The statement recently issued shows that in the nine months ended Sept. 30, the amount available for dividends was $24,139,411, an increase of $785,945 over the corresponding period last year, and equal to $12.06 per share of stock.

Colorado Fuel's Quarterly Net is Reduced

While the gross receipts for the quarter ending Sept. 30, 1918, for the Colorado Fuel & Iron Co., Denver, Colo., were considerably larger than for the same period last year, the net is appreciably lowered. This is true notwithstanding the fact that depreciation and depletion were slightly below those of the corresponding period in 1917. Operating expenses were higher and the deduction for taxes, bond interests, sinking funds, etc., was increased.

Gross receipts for the three months ended Sept. 30, were $12,320,507 this year, as against $10,441,420 last. Operating expenses were $1,906,328 greater in the third quarter this year than last and $64,007 more was deducted for bond interest, taxes, sinking funds, etc. Net earnings were $959,404 as compared with $1,077,473. With a deduction of a 2 per cent

preferred stock dividend and a ¾ per cent common stock dividend, the surplus for the third quarter was $171,979 as against $289,987, or $118,008 less than last year.

Century Steel to Operate Fulton Plant

Control of the Fulton Steel Corp., which recently was placed in the hands of receivers, has been obtained by the Century Steel Co. of America, Poughkeepsie, N. Y. The latter company will operate the Fulton plant, at Fulton, N. Y., for a period sufficiently long to demonstrate the value of the property, after which, if satisfactory, it will purchase the control. The Century Steel Co. manufactures crucible alloy and carbon tool steels. The plant at Fulton is equipped for the production of electric alloy and carbon tool steels, being provided with two electric furnaces of the heroult type. The output of the Fulton plant is somewhat larger than that of the Poughkeepsie plant, thus more than doubling the production of the Century Steel Co.

Operation Shows Loss

Due to a substantial expansion in costs, an operating deficit of $146,090 is shown by the National Conduit & Cable Co., for the third quarter. Other income reduces this to $126,798 but taxes, charges, depreciation, etc., send the total deficit for the period up to $483,380. For the nine months ended Sept. 30, net sales aggregated $10,790,010, with manufacturing costs and expenses of $11,011,206. The loss from operation was $221,196. With an outside income of $66,356, the total deficit is placed at $154,841. A total of $723,007 has been written off for taxes, charges and depreciation leaving a loss of $877,848 for the nine months.

Implement Makers Merge

An amalgamation has been effected between the John Deere Plow Co., Ltd., Welland, Ont., and the Dain Mfg. Co., Ltd., a subsidiary of Deere & Co., Moline, Ill., under the name of the John Deere Mfg. Co., Ltd. The new concern is capitalized at $1,000,000 with headquarters at Welland, Ont. The directors are William Butterworth, George W. Mister, Burton F. Peek, Floyd R. Todd and Frank Lilloway, all of Moline, Ill.; Charles N. Stone and Lorenzo C. Raymond, of Welland; David Drehmer, of Winnipeg, and Myron E. Forbes, of Syracuse, N. Y.

Accept Old Price

Washington, Nov. 5.—Authorization for the purchase of 7,500,000 pounds of horse and mule shoes for overseas and domestic use has been given to the general supplies division of the war department. Complete deliveries on this quantity, for which orders already have been placed, will be made; it is expected, within 60 days. On Oct. 1 base prices of horse and mule shoes advanced 50 cents per 100 pounds, but after a meeting of the manufacturers' association, where facts with reference to this quantity had been presented to them, these orders were accepted on the basis of the old price.

Raise Tariffs on Slag

Youngstown, O., Nov. 5.—The railroad administration has determined on a freight tariff of 25 cents a ton for blast furnace slag and ashes and 44 cents on other waste material. This is a compromise, the administration having proposed tariffs of 50 and 90 cents, respectively, as against 20 and 35 cents, the prevailing rates. The new rates are to apply until more accurate cost figures on moving this material can be obtained for consideration by representatives of the producers and the district freight agents' committee.

Financial Crop Ends

On a 100 per cent war basis, the Packard Motor Car Co., Detroit, is manufacturing army trucks, Liberty motors and ordnance equipment. Net profits of $5,616,701 for the year ended Aug. 31, 1918, were reported at the recent annual meeting of stockholders. This is the second best year in the company's history, comparing with $6,206,419 for the year ended Aug. 31, 1916, and $5,400,691, 1917.

* * *

The president of Brazil on Aug. 7, 1918, issued a decree authorizing the operation in Brazil of the American Steel Co., a branch of the American Steel Export Co., 233 Broadway, New York City. The company's charter permits it to manufacture iron, steel, manganese, copper and other metals and their alloys, the purchase and sale of metal products and the purchase and exploitation of mines and timber lands of all kinds. The capital stock of the company is $20,000.

* * *

Vice Chancellor Lane has discharged the receivership of the American Pipe & Construction Co., Trenton, N. J., and restored its assets. Frank McDermott, of Jersey City, N. J., was appointed receiver for the concern, a New Jersey corporation with $5,000,000 of capital stock outstanding. He never took possession of the assets of the company, however, because a receiver appointed by a federal judge in Pennsylvania already was in possession and an ancilliary receiver also had been appointed by a federal court in New York.

* * *

To build concrete boats for both the government and private firms, the Clarke-Martin Ship Building Corp., of Catskill, N. Y., and New York City, has been incorporated for $100,000, all paid in. Officers of the firm follow: President, F. Toomey Jr., of the machinery house of Frank Toomey, 120 North Third street, Philadelphia; and treasurer, George W. Clarke, head of the George W. Clarke Co., Singer building, New York City, machinery merchants. The new company's yards are located at Catskill, N. Y., and its offices at 149 Broadway, New York.

Future Demand

For Coal Tar Products Source of Conjecture—Cancellations Expected

New York, Nov. 12.—Coal tar products manufacturers are indulging in considerable conjecture as to future demand. While no authoritative information is available, the coming of peace, it is believed, will bring about general cancellations of contracts involving explosives for heavy projectiles. Material for making explosives to be used in small arms ammunition, on the other hand, will, it is thought, continue to be wanted on a fairly large scale. In general, however, the ending of the war is considered as bound to release a large quantity of coal tar products which now are going into the manufacture of high explosives; hence peace is expected to usher in an easier market generally.

In replying to applicants for export licenses, the war trade board is asking sellers to state when and where the raw material entering into the manufacture of the phenol was obtained. It is believed that as long as present conditions prevail, a very stringent policy will be pursued with regard to granting licenses for export.

Considerable business and further large inquiries characterized the benzol market. Consumers generally are restricting their purchases to material for spot and nearby.

The war industries board released nearly 100 per cent of the toluol asked for in applications for November deliveries. This liberal action resulted from the fact that government requirements temporarily do not absorb the total output of toluol. Some contract buying for the next season has developed in naphthalin, but is proceeding slowly. Delay also continues to characterize the placing on the market of a substitute for solvent naphtha.

Coke Oven By-Products

	Spot
Per Gallon at Producers Plant	
Pure benzol	$0.22 to .27
Toluol (on sales sanctioned by government) (tank cars)	1.50
Toluol (on sales sanctioned by government) (drums)	1.55
Toluol (for government)	1.50
Solvent naphtha	no market
Per Pound at Producers Plant	
Phenol	$0.42 to 0.44
Naphthalin, flake	0.10
Naphthalin, balls	0.12½
Per 100 Pounds at Seaboard	
Sulphate of ammonia (to fertilizer trade)	$4.50 to 4.75
Contract	
Pure benzol	nominal
Toluol	no market
Solvent naphtha	nominal
Per Pound at Producers Plant	
Phenol	nominal
Naphthalin, balls	$0.12⅛
Naphthalin, flake	0.10
Per 100 Pounds at Seaboard	
Sulphate of ammonia (for commercial use)	no market
Sulphate of ammonia (for government)	$4.50

Readjustments to Stir Tool Market

Peace Declaration Brings Many Cancellations—Re-instatements Will Follow Adjustment Period—Railroads and Airplane Builders to Develop Extensive Tool Needs—Pennsylvania Buys Cranes—$1,000,000 Tool Order Placed for Charleston Armor Plant

PERHAPS sooner than was expected a few weeks ago, the machine tool trade is facing that period of readjustment, wherein industry will revert from a war to a peacetime basis. Governmental co-operation and continued supervision by war trade bodies is calculated to serve as a stabilizer and on that account, the future is being approached with confidence. But for the assurances from Washington that the change will be gradual and that wholesale cancellations are not on the program, the several weeks ahead would be fraught with serious possibilities. As it is, war industries are scheduled to be superseded gradually by peacetime pursuits and many express the opinion a highly prosperous period is ahead.

No new equipment has been going to railroads. Everything has been sent to General Pershing. With the railroad administration in power for another year, large tool lists are expected from all lines. During the past week railroad buying of cranes was a feature. The New York Central bought four overheads and the Pennsylvania eight 25-ton cranes of that type. The latter road is inquiring for 20 electric cranes for Marietta, York and Derry, Pa., shops. A large list of miscellaneous tools will be issued shortly for the Marietta shops. The Reading railroad is inquiring for cranes also.

One of the outstanding and significant features of the past week was the placing of an order for $1,000,000 worth of armor plate equipment for the proposed government's plant at Charleston, W. Va.

The Rubay Co. and the Glen L. Martin Co., Cleveland, airplane manufacturers, are to continue to produce planes for mail service, coastal defense, patrol duty, etc. Machine tool dealers claim the airplane market has unlimited possibilities for the disposal of their product.

While cancellations from munition plants for machines have been numerous, other cancellations are few, doubtless because the government has arranged to reimburse manufacturers for all expenditures for such equipment. In many cases machines have been ordered held up, pending further developments. This is true of much equipment for the Neville island ordnance plant. It is anticipated likewise that that part of the deficiency bill recently signed by the President calling for $3,500,000,000 for ordnance now will not be appropriated. Many other avenues for machine tools however are believed to be in prospect. The automobile industry apparently is due for a great revival. The demands for rehabilitation of France; the accumulated needs of South America and other neutral markets all will go far to make up for the loss of war orders.

Much second-hand machinery is beginning to appear on the market. It is the tendency of the small subcontractor to unload. It is expected within a few weeks, the used machinery dealer will be able to locate almost any type of tool he may desire whereas not long ago he could not find anything to meet his requirements. No little difficulty is anticipated in obtaining tool parts to repair used machines, since builders will not wish to kill the market for their new equipment.

Machinery Industry Gets Ready for Peace Pursuits

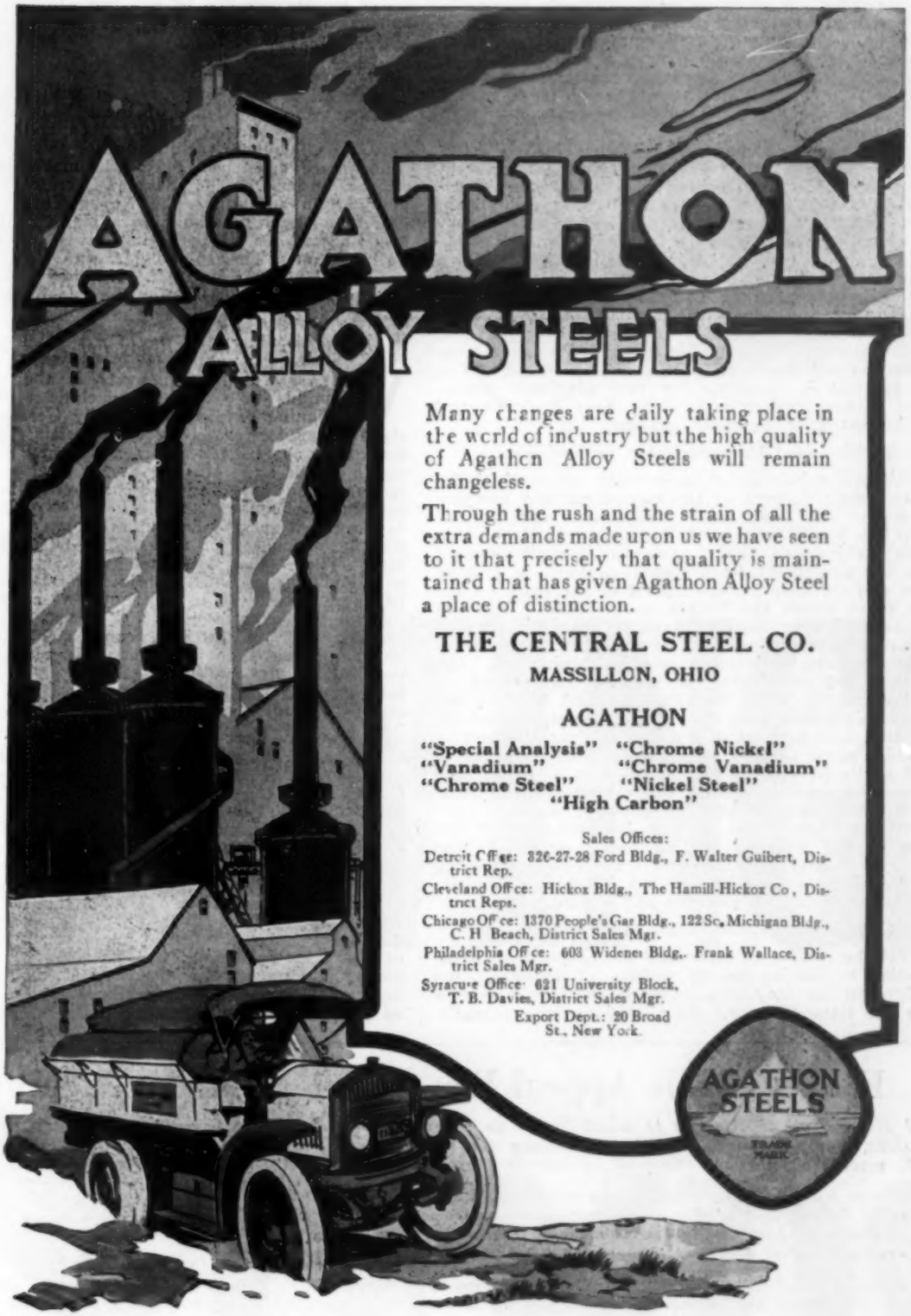
WITH assurances coming out of Washington that the government will take every precaution in safely transforming industry back to a peacetime basis, the eastern machine tool trade faces the future with steadily increasing confidence. As indicated by these assurances, there will be but a gradual lifting of war restrictions and curtailments with no sweeping cancellation of war contracts now in effect. Furthermore, as stated recently by Chairman Baruch, of the war industries board, government contracts must continue on a wide scale for considerable time to come. At present, a committee, comprised of members of the various war boards, such as the railroad administration, war trade board, etc., are at work perfecting plans for reconverting the manufacturing facilities of the country to peace production, and it is considered likely, that as a result of the committee's finding, the life of the war boards will be extended for some time now that the formal armistice agreement has been signed.

It has been but a foregone conclusion, of course, that much of the war work in prospect for the near future would never materialize in the event of an early cessation of hostilities. And it now appears likely that the appropriations of about $3,500,000,000 for ordnance, as set forth in the deficiency bill recently signed by the President, will be held up and eventually cancelled. However, on the other hand, the demand from truck manufacturers, automobile companies, and railroads, particularly the latter, is expected to go a long way toward ameliorating conditions. In addition, there will be the demand for equipment for rehabilitating Europe, and the pent-up inquiry from South America, and the other more neutral sections of the globe.

As to manufacturers now engaged heavily in war work, it appears that their needs will not be especially large. It is believed that the vast majority of older and more established companies, which have diverted their production to war materials, have been forced to make only such changes as will be adaptable in one way or another to their needs after the war. At the same time they have discarded but little equipment in taking on this new work. One of the many cases in point is where a manufacturer, in taking a shell contract, did so by expanding his plant with a view to later producing his own forgings, of which there had been a general shortage before the war.

Some of the newer companies, established solely to engage in the manufacture of munitions, will undoubtedly drop out of existence, and their equipment in many instances after the severe strain occasioned by war conditions, will be scrapped, and this scrapping process will be carried out in a varying degree throughout industry. Other of the newer companies will survive and perhaps be a buying factor for many years to come.

During the past week, an outstanding development in trading has been the purchase of more than $1,000,000 worth of armor plate equipment for the government plant at Charleston. The railroads also have continued to buy



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Through the rush and the strain of all the extra demands made upon us we have seen to it that precisely that quality is maintained that has given Agathon Alloy Steel a place of distinction.

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"Special Analysis" "Chrome Nickel"
"Vanadium" "Chrome Vanadium"
"Chrome Steel" "Nickel Steel"
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Sales Offices:

Detroit Office: 826-27-28 Ford Bldg., F. Walter Guibert, District Rep.

Cleveland Office: Hickox Bldg., The Hamill-Hickox Co., District Reps.

Chicago Office: 1370 People's Gas Bldg., 122 So. Michigan Blvd., C. H. Beach, District Sales Mgr.

Philadelphia Office: 603 Widener Bldg., Frank Wallace, District Sales Mgr.

Syracuse Office: 621 University Block, T. B. Davies, District Sales Mgr.

Export Dept.: 20 Broad St., New York.

on a fairly large scale, but as for the general run of miscellaneous demand, the situation has been quiet. Manufacturers as a rule have been inserting noncancellation clauses in all new contracts. Other manufacturers, however, engaged entirely in government work, either directly or indirectly, maintain that in any event the government will be in complete control, and that the adoption of such a policy would not be entirely sound from the standpoint of future business. A question now confronting second-hand dealers, who as a result of the war, have established plants for the rebuilding of used equipment, is whether they will not have difficulty in getting a sufficient supply of repair parts. It is feared in some quarters that these parts will not be coming forth so readily from manufacturers, as more purely business considerations usurp those of patriotism.

Demand from the railroads is a feature in the crane market at the present time. The Pennsylvania lines west are buying eight 25-ton overhead cranes, which will be allotted equally between the shops at Buffalo and Olean, N. Y. A list of 20 electric cranes, of varying capacity, is expected to be issued shortly for the proposed shops of the Pennsylvania railroad at Marietta, Pa., as well as a large list of machine tool equipment. It is understood this will be bought through Philadelphia. The Pennsylvania is also inquiring for a 5-ton electric crane for Derry, Pa., and another small crane, it is understood, for York, Pa. The company recently purchased a 15-ton crane from Niles-Bement-Pond for the Altoona, Pa., shops. The Reading railroad is inquiring for two overhead cranes, of 35 and 10 tons respectively. The New York Central recently bought four overhead cranes.

Neville Island Operations Are Suspended

IN Pittsburgh, a barrage of uncertainty effectively hides the immediate futures of the equipment and machine tool trade. Not only is the trade in a state of uncertainty, but some feeling of depression is developing as a result chiefly of fairly numerous cancellations of contracts for equipment from plants engaged in making munitions and the suspension of parts of the work on the ordnance plant which the United States Steel Corp. has under construction at Neville island for the government. With the order suspending work at this plant came notice also of the holding up of contracts for equipment. The great bulk of the machinery and tools already placed for the plant were for long time delivery and builders are protected against loss since they will be compensated for anything that is in process of building at time of cancellation. While some of the government's requirements of semisteel shells have been placed, doubt now exists that the order will reach some of the estimates in circulation when the matter first was broached. Pittsburgh companies have secured little of this business and it has not been of any help to the machinery trade of that district. The Pennsylvania lines west, not only are placing some orders for shop equipment, but is making inquiries for axle lathes, grinders, punches and shears.

Chicago Receives But Few Cancellations

WITH the coming of peace and the approach of a decline in activity among makers of munitions has brought but few cancellations of machine tools now on order for later delivery. At all times some cancellations are met and there are no more at present than might be expected at any time. The Waterloo Gas Engine Co. has cancelled an order for six turret lathes and some other equipment and is offering for sale 12 lathes of a type which it cannot use. The reason given for this change is that its shells are to be semifinished instead of entirely finished, which alters the class of equipment necessary. In a few instances orders which were given under excitement are now being cancelled in the same spirit. In addition to the large boring and turning machines for 12 to 18-inch shells being built by the Amalgamated Machinery Corp., of Chicago, for the Neville island plant, this concern is building 40 huge lathes 200 feet long with beds in 12 parts and with a 102-inch swing. It is for the machining of these beds that this builder now is constructing a reinforced concrete planer 500 feet long. Small buyers seeking one or two machines are still in evidence and their purchases make up most of the present business. The Sasgen Derrick Co., Chicago, is building an addition. The Regan Forge & Engineering Co., Los Angeles, is building a plant. The Great Northern Railway Co. is preparing plans for shops at Great Falls, Mont. The Inland Machine Co., St. Louis, will build a plant 200 x 300 feet. Newcastle, Wyo., has voted a bond issue of $200,000 for the construction of a waterworks system.

Cleveland Gets Ready For Readjustment

WHAT will happen next? is the question in the minds of Cleveland machine tool dealers. The signing of the armistice by Germany has brought about a paradoxical feeling of uncertainty and satisfaction; uncertainty about the huge orders on hand for shell and gun-making tools and satisfaction that after a period of readjustment, an unprecedented prosperity will develop for machine tool makers and dealers. As early as last Saturday, when it seemed certain that signing of the armistice was but a matter of hours, cancellation telegrams were filed. These were delivered on Monday morning amidst wild and noisy scenes of rejoicing over victory achieved. In some cases, the cancellations were accepted as temporary, the expectation being the orders would be reinstated later. In others, the cancellations were refused on the ground that the tools were already in course of construction and as such would come under the government's contract proviso that reimbursement would be made for expenditures for such equipment.

A case in point is the effort of the Hercules Motor Co., Canton, O., which recently obtained a government order for $2,000,000 worth of motors. In equipping the plant of the James Mfg. Co., for quantity production of these motors, the Hercules company found it necessary to purchase upwards of $50,000 worth of machine tools. Cleveland dealers obtained a large share of this business and on Monday received cancellation telegrams. It is thought however that since the motors the Hercules company was to furnish are for 5-ton trucks, the orders soon will be reinstated, because an enormous number of trucks will be required in reconstruction work. Glen L. Martin, of the Glen L. Martin Co., Cleveland, builder of battleplanes announced late last week that his plane is constructed with peace time needs in view and that building of the 56 now on order would be rushed to completion.

France Sends Appeal For American-Made Machinery

IN HIS appeal to America to assist France in her reconstruction program, with men, money, materials and ships, Andre Tardieu, general commissioner for Franco-American war affairs, in New York, the night of Nov. 8, made the following statement of interest to machine tool builders:

"From America France asks for a contribution of labor by American troops now on her soil; for credits to extent of 50 per cent of her reconstruction purchases in this country for raw materials, railroad rolling stock and for diversion of part of the emergency agricultural tools and industrial machines, and for the diversion of part of the emergency fleet to the uses of French commerce."

While France will exact restitution for German depredations, Mr. Tardieu asserted, speed in the reconstruction is imperative and "America, on account of her immense capability for production, ought to give us the first help."

He declared that the war has reduced by one-fifteenth the effective population of the republic, that 350,000 homes have been destroyed, that agriculture, commerce and industry in the invaded regions virtually have been wiped out, that French shipping and foreign trade have been reduced almost to nonexistence. Mr. Tardieu said that approximately 50,000,000,000 francs or $10,000,000,000 will be required to finance the process of restoration.

While France, "for many months the main battle field of liberty and right," will draw upon her every resource and those of her colonies to mobilize this vast sum, the commissioner stated, she confidently looks for assistance from the allies.

WAR SAVINGS STAMPS

The announcement was made coincident with advices from Washington by the war department that charting of the air lanes over the United States for mail service, etc., has been begun by the air service of the army. This is preliminary work looking toward regulation aviation passenger service in the near future. Airplane manufacture is expected to develop large tool needs. Railroads too, who have been denied equipment so long, that the needs of the department of military roads in France might be supplied, are expected to come into the market shortly although these lists have not been issued to date.

A noticeable dropping off in inquiries has been the case for the past week or 10 days. Prospective purchasers had adopted the watchful waiting policy. A tendency early was noted however in purchases of tools made necessary by the government's demand for a speeded up production; to specify second-hand machinery. One analysis is that in the event of a cessation of hostilities the equipment could be disposed of more easily than new machines. That the small subcontractor is endeavoring to get out from under as early as possible, is evidenced by the number of advertisements making their appearances in daily newspapers and elsewhere of the unloading of entire shop equipment. The Wilcox Motor & Mfg. Co., Detroit, has asked that its order for turret lathes be held up pending developments. The Buckeye Coal & Railway Co., Columbus, O., is in the market for a 12 to 14-inch drill and one grinding machine with standard and counter shaft to take from 10 to 12-inch wheels. The Federal Motor Truck Co., Detroit, is inquiring by telephone for a 2 inch capacity centering machine. The Ohio Blower Co., Orrville, O., is expected to come into the market shortly. The Champion Machine & Forging Co., Cleveland, is about to build a 54 x 200-foot addition to its plant and a small addition is being erected by the Wapakoneta Machine Co., Wapakoneta, O. Equipment needed for two shops at Columbus, to be built for the Toledo & Ohio Central railroad will probably necessitate the issuance of a fair sized inquiry and the Packard Motor Car Co. is expected to enter the market, since it is to spend $800,000 on plant extensions at Detroit. Other automobile manufacturers are making tentative inquiries for equipment to replace much of the worn out machinery they have been operating on shell work.

New Construction and Equipment

Concise and Timely Business Building Opportunities from the Field of Industry

Among New England Factories

PORTLAND, ME.—The Ward Machine & Tool Co. has been incorporated as mechanical and electrical engineer, toolmaker, founder, metal worker, etc., with $10,000 capital by Charles M. Drummond, R. B. Buzzell and Wadleigh B. Drummond.

PORTSMOUTH, N. H.—The Emergency Fleet corporation is having plans drawn for the construction of a drydock, to cost $900,000.

PORTSMOUTH, N. H.—A $135,000 machine shop will be erected here by the navy department. C. W. Parks, chief of the bureau of yards and docks, Washington, D. C., will receive bids shortly on this work.

BOSTON.—The Durable Machine Co. has been incorporated with $5,000 capital by Martin A. Powers, Joseph Adams and M. M. Powers.

BOSTON.—The Carbon Products Corp. has been incorporated with $100,000 capital by Roy A. Corey, Daniel B. Linn, Dorchester, Mass., and G. C. French.

BOSTON.—The Woods Steel & Process Corp. has been incorporated with $99,000 capital by D. Fletcher Barber, John L. Robison, Newton, Mass., and J. R. Hope.

BOSTON.—The Massachusetts Sprinkler-Power & Sanitary Engineering Co. has been incorporated to make automatic fire extinguishers, etc., with $50,000 capital by Patrick J. Sullivan, Louis S. Kaufman, Dorchester, Mass., and John S. Graham.

CHATHAM, MASS.—C. W. Parks, chief of the bureau of yards and docks, Washington, will receive bids shortly for erection of a $30,000 boiler house.

DEIGHTON, MASS.—Work on a $200,000 mill addition on the Mount Hope Finishing Co. has been indefinitely postponed.

EAST BOSTON, MASS.—The Boston Elevated Railway Co. will build a terra cotta, 1-story, 70 x 130-foot addition to its Eagle street car house.

ERVING, MASS.—The Washburn-Hayward Chair Co. contemplates the erection of a brick, mill construction, factory addition at a cost of $500,000.

FALL RIVER, MASS.—The government contemplates the erection of a concrete and wood dock to be built at a cost of $2,000,000.

FITCHBURG, MASS.—The engine room in the factory of C .W. Bennett & Co., Inc., was damaged by fire recently.

FITCHBURG, MASS.—The Fitchburg Grinding Machine Co. has let a contract for the erection of a brick, mill construction, 2-story, 40 x 48-foot addition to its plant.

Government Inquiries

BIDS on the following equipment are desired by the navy department, bureau of supplies and accounts:

Screw machines, 3515, eastern and western yards.

One screw machine, 6710½, Philadelphia.

Motor driven hacksaws, 6821½, Brooklyn.

Drill grinding machines, 6847½, Washington.

Vertical shapers, 6895½, Brooklyn.

Tool grinding machine, heavy type miller, engine lathe and tool sets, 6896½, Nov. 22, F. O. B. works.

Engine lathes, 6897½, Brooklyn.

Equipment for machine tools, 6905½, Boston.

Six bench type drills, 6913½, Nov. 22, Philadelphia.

Grinding and boring machines, single surfacer, patternmaker's vises, disc sander, double woodturning and speed lathes, planer and joiner and band sawing machines, 6924½, Nov. 18, New London.

One each, arbor press, turning machine and grinding motor, 6944½, San Diego.

One each, elbow edging machine, hand punch spot welding, machine, drill power press and single shear, 6946½, New Orleans.

Two die sinkers with engine, 6946½, Washington.

One steel bolt heading machine, 6953½, Puget Sound.

One each, engine and precision lathes drill, bench grinder and shaper, 6954½, Boston.

One single surface planer and two bench band saws, 7017½, Boston.

Schedule numbers, dates of opening and places of delivery follow the specifications of the tools.

NEW BEDFORD, MASS.—The state has let the contract to the J. W. Bishop Co. for a 1-story, 105 x 260-foot addition to the state pier.

QUINCY, MASS.—The Electric Boat Co. has let a contract for the erection of an addition, one story, 88 x 137 feet.

SHELBURNE FALLS, MASS.—The H. H. Mayhew Co. contemplates the erection o a fireproof addition to its factory.

TAUNTON, MASS.—The Taunton Wire Co. has been incorporated with $25,000 capital by Max Levy, Samuel Robbins, New Bedford, Mass., and Thomas H. Kearns.

WORCESTER, MASS.—Plans for the construction of a $30,000 addition at the plant of the Morgan Spring Co. have been placed in abeyance.

WORCESTER, MASS.—Fire damaged the plant of the William H. Sawyer Lumber Co., causing a loss of $200,000. The plant probably will be rebuilt.

WORCESTER, MASS.—The government has let the contract to the E. J. Cross Co., for a brick factory for the Liberty Crankshaft Co., adjoining the plant of the Leland-Gifford Co.

WORCESTER, MASS.—The New England Mill Equipment Co. has been incorporated with $20,000 capital by Otto Wechsberg, Alfred L. Fink and Linwood M. Erskine.

WORCESTER, MASS.—The Foster Mfg. Co. has been incorporated with $250,000 capital by Archie L. Foster, Richard C. Anderson and George C. Douglas, Boylston, Mass.

CRANSTON, R. I.—The Liberty Mfg. Co. has been incorporated to make iron and steel products, with $25,000 capital, by George J. Bauer, Auburn, R. I., William Priestman and Fitz Nelson.

EAST PROVIDENCE, R. I.—The Abrasive Machine Tool Co. has let a contract for the erection of a 1-story, 40 x 50-foot addition to its plant.

PAWTUCKET, R. I.—The Wood & Metal Co. has been incorporated with $25,000 capital by Walter J. Tuttle, Providence, R. I., J. Horace Charpentier and Frank T. Chase.

PROVIDENCE, R. I.—The Providence Steel & Iron

A PERFECT START — A PERFECT FINISH

A successful offensive manoeuvre must gain its objective. Tanks, planes, and motors must be able to make a perfect finish as well as a perfect start. They must have, not only power and endurance enough to buck the inferno of a modern defence, but also reserve power enough to carry them through to the victory.

Vehicles of war or peace, in order to gain their objective—in order to give the satisfaction or produce the results for which they were intended, must have invulnerable vital parts.

Whether you are manufacturing Tanks, Airplanes, Motor Trucks, Automobiles, Farm Tractors or other farm machinery you should have castings of a quality and strength fit for that particular service.

The Ohio Steel Foundry Co.

Plants

Springfield, Ohio Lima, Ohio Bucyrus, Ohio

Quality PLUS Service

Co. contemplates the erection of a $15,000 addition to its plant. Eugene G. Whipple is engineer in charge.

PROVIDENCE, R. I.—Abraham White will build a concrete block, mill construction, 2-story and basement, 44 x 54-foot metal shop and garage on Printery and Pettis streets.

BRIDGEPORT, CONN.—The Heppenstall Forge Co. has awarded a contract for the construction of a $19,000 addition to the Berlin Construction Co., Berlin, Conn.

DERBY, CONN.—The General Ordnance Co. will build a brick, mill construction, 1-story, 60 x 250-foot extension to its plant.

NEW HAVEN, CONN.—The Arnold Electric Tool Co. has been incorporated with $25,000 capital by George A. Arnold, New York, Raymond P. Saltsman and Frederick E. Levere, both of West Haven, Conn.

BRIDGEPORT, CONN.—The Bridgeport Metal Treating & Machine Co. has been incorporated with $5000 capital by George L. Beitner Sr., George L. Beitner Jr. and K. C. Beitner.

DURHAM, CONN.—The plant of the Merriam Mfg. Co., which was recently badly damaged by fire, will be rebuilt at once.

HARTFORD, CONN.—The Connecticut Life Insurance Co. contemplates the erection of an office building on Elm street after the war.

NEW BRITAIN, CONN.—The Fafnir Bearing Co. has let a contract for the erection of two 12,000-gallon tanks.

STAMFORD, CONN.—The Waterside Mills, whose mill and powerhouse recently were damaged by fire, contemplates the rebuilding of the same.

Along The Atlantic Coast

BROOKLYN, N. Y.—A $30,000 forge shop will be built by the Atlantic Basin Iron Works, of which John Shields, 11 Imlay street, is president. The general contract for the building has been awarded to Post & McCord, 101 Park avenue, New York City. The proposed building will be one and two stories high, 67 x 210 feet.

BUFFALO.—The Buffalo Pressed Steel Co. has had plans prepared for the erection of a 1-story, 20 x 35-foot addition to its plant.

BUFFALO.—F. G. Krome, West Ferry street, plans to remodel his plant for the manufacture of machine parts.

BUFFALO.—The Strong Steel Co. has awarded a contract for the erection of a 1-story, 50 x 100-foot foundry addition.

BUFFALO.—The Worthington Pump & Machinery Co. contemplates the erection of a 1-story transformer house.

BUFFALO.—The Globe Woven Belting Co. will erect a $10,000 addition to its plant here. The proposed structure will be one story, 50 x 103 feet.

BUFFALO.—Plans have been completed for a $10,000 addition to the plant of the Curtiss Aeroplane & Motor Corp. The structure will be one story, 51 x 87 feet.

DUNKIRK, N. Y.—The Atlas Crucible Steel Co. plans the erection of a 1-story addition to its plant on Howard street.

ELMIRA, N. Y.—The James Mfg. Co. contemplates the erection of an addition to its plant.

ELMIRA, N. Y.—The Eclipse Machine Co. recently awarded the contracts for the erection of two additions to its plant.

LOCKPORT, N. Y.—The McKim Foundry & Machine Co. recently increased its capitalization and contemplates the erection of an addition to its plant.

LOCKPORT, N. Y.—The Isco Chemical Co. contemplates erection of a $5000 addition. Evan C. Speiden, vice president, is in charge.

LONG ISLAND CITY, N. Y.—An $18,000 warehouse, one story, 100 x 100 feet, will be erected here by John Thompson, 253 Broadway, New York City. John T. Winter & Son have been awarded the general contract.

NIAGARA FALLS, N. Y.—The Ferguson Iron & Steel Co. is building a 1-story, 40 x 600-foot addition to its plant.

OLEAN, N. Y.—The Tifft Construction Co., Buffalo, has been awarded the general contract for erecting a $40,000 stripping and finishing building for the Pennsylvania railroad here. The building will be one story, 45 x 100 feet.

PELHAM, N. Y.—The United Gas Works will build a 1-story, 40 x 100-foot generator house. Post & McCord, 101 Park avenue, New York City, are in charge.

PHOENIX, N. Y.—The Three Rivers Machine Tool & Die Co. has increased its capitalization and plans to enlarge its plant.

WATKINS, N. Y.—A $15,000 boiler house addition will be erected at the Glen works of the International Salt Co., in this city.

BEDFORD, PA.—The Tile Waterpipe Co. plans to build a 3-story machine shop at a cost of $15,000.

BETHLEHEM, PA.—A $7000 addition will be made to machine shop No. 2 of the Bethlehem Steel Co. The proposed extension will be four stories, 36 x 64 feet.

BRIDGEVILLE, PA.—The Universal Rolling Mill Co. recently acquired additional land on which it contemplates the erection of an addition to its plant.

PHILADELPHIA—The general contract for a $31,000 blacksmith shop has been awarded by the Wm. Cramp & Sons Ship & Engine Building Co., to F. A. Havens & Co.

HARRISBURG, PA.—L. W. Mitchell, secretary of board of commissioners, will close bids Nov. 12 for the construction of a bridge over Aughwick creek.

MASURY, PA.—The Standard Construction Co. has started a plate shop addition.

PHILADELPHIA.—The Atlantic Refining Co. plans the erection of a 1-story addition to its tin shop.

PHILADELPHIA.—The Nicetown Plate Washer Co., manufacture of bolts, has acquired a plant and plans to equip it for the manufacture of its own products.

PHILADELPHIA.—The Pennsylvania Chemical Co. has awarded the general contract for a 1-story factory building, costing $25,000.

SHARON, PA.—The Peters Iron Works Co. contemplates the erection of an addition to its plant.

SCRANTON, PA.—E. A. Fuller has received the general contract for a $75,000 addition to the plant

Business Changes of Recent Date

SINCE it outgrew its former offices and factory at 176 Worth street, New York, the Modern Tool & Machine Works, Inc., has removed to 344 Mulberry street, Newark, N. J. It will continue to specialize in gages of all kinds, dies, jigs, fixtures and special machinery.

The National Engineering Co., Chicago, manufacturer of Simpson sand mixers and other foundry equipment, has removed from 5 North La Salle street to Machinery Hall building, 549 West Washington boulevard.

* * *

The Patterson-Kelley Co., Philadelphia, manufacturer of feedwater heaters and kindred specialties, has removed its offices to the Harrison building, Market and Fifteenth srteets.

* * *

The Heating & Power Equipment Co., 130 Sycamore street, Milwaukee, has changed its name to Sterling Engineering Co. The capital has been reduced from $50,000 to $15,000.

* * *

Oscar F. Ostby, railway supplies, has removed his office from 2736 Grand Central Terminal, New York, to room 1044 the same building.

* * *

R. H. Beaumont & Co., Philadelphia, manufacturers of coal, ash and coke handling equipment, have moved their headquarters from the Drexel building to 315 Arch street.

* * *

Frederick Cowin & Co., Joliet, Ill., manufacturers of merchant bar iron, have removed their Chicago offices from 4201 South Halsted street to 76 West Monroe street.

* * *

The Carlson Machine Co., 619 West Washington boulevard, Chicago, has increased its capitalization from $5000 to $15,000 and changed its name to the Sheldon Machine Co.

* * *

The Taylor Machine Co., Cleveland, has taken over the business of the Baxter Gear Cutting & Mfg. Co., and will conduct it under the name of the Taylor Machine Co.

* * *

The Special Tool Engineering Mfg. Co., Inc., Dayton, has taken over the C. J. Weinman Co., Inc., to specialize in high class tool work, fixtures and gages.

* * *

The British ministry of munitions of war in the United States has removed its gage department and laboratory to 360 Madison avenue, New York, with H. J. Bingham Powell, inspector in charge.

* * *

The Stuebing Truck Co., Cincinnati, manufacturer of lifting trucks, now is located in its new plant at Mitchell avenue and the Baltimore & Ohio railroad, Winton place, Cincinnati.

The Sivyer Service of providing Electric Steel Castings has for its objects the decrease of machining costs and the increase of wearing-quality and life. Both are attained by methods which result from long experience and begin with the design of the casting itself. When we find that a casting we are asked to furnish is of a design not consistent with good foundry practice, we study its function in the completed unit and offer the necessary suggestions to make it a really practicable casting job without affecting in any way its function and efficiency.

Secondly, Sivyer Service analyzes the functions of the casting and specifies the proper composition steel for the job; long experience with carbon and alloy steels has enabled us to reduce costs and increase quality remarkably for many different industries.

Thirdly, Sivyer Service makes a careful study of the pattern and molding problem involved, for improper gating and insufficient risers are often the greatest wasters of machining labor and metal.

SIVYER S CASTINGS

Fourthly, Sivyer Service analyzes carefully the proper annealing methods to be used and controls their proper application through unfailingly efficient equipment and men. In short, the Sivyer Service supervises every step necessary to secure unusually and unfailingly good castings of electric steel. It never relies on one factor alone, relies very little even on the natural freedom of electric steel from occluded gases and on its commonly recognized merit in resisting crystallization. It also depends but little on the inherent scientific accuracy of the electric furnace process. From casting design to sand blasting and tumbling, the fundamental superiority of Sivyer Steel is due to its men and metal. Their value is best proved by the fact that, although the production of steel castings is generally looked upon as a local one, the Sivyer market is national.

THE scientific mixing of sands and oil is a small but important part in keeping the surface of Sivyer Castings free from the pinholes and dirt which make machining difficult and costly.

It is still more important because it provides for that proper escape of gases from the cooling metal so essential—even with electric steel—in keeping the interior of the casting free from the imprisoned gases which, in ordinary castings, cause many losses in machining, and cause even more distressing failures in actual service.

SIVYER STEEL CASTING COMPANY, MILWAUKEE

SIVYER STEEL

of the MacCar Truck Co. Plans call for a structure, one story, 70 x 200 feet.

BLOOMFIELD, N. J.—A $5000 addition will be erected at the plant of the American Arms & Fuse Co.

CAMDEN, N. J.—Fire recently damaged the pattern shop and storehouse of the Camden Iron Works and burned war machinery patterns valued at $200,000.

EAST ORANGE, N. J.—The Sprague Electric Co. has awarded a contract for the erection of a 2-story, 60 x 163-foot pattern shop, to be erected at a cost of $50,000.

ELIZABETH, N. J.—The Standard Aircraft Corp. is reported to be contemplating the reconstruction of its plant here, at a cost of $400,000.

ELIZABETH, N. J.—Titanine, Inc., has been incorporated with $99,000 capital to manufacture airplane paints, etc., by E. C. Davis, Elizabeth; R. S. Doubleday, Newark, and E. T. Costello, New York City.

GLOUCESTER, N. J.—The Pusey & Jones Shipbuilding Co. contemplates the erection of an addition.

JERSEY CITY, N. J.—The Hudson Concrete Construction Co. has a contract for a $5000 foundry for the Vulcan Iron Works.

NEWARK, N. J.—Peller Bros. Co. plans making alterations to its foundry, costing $9000.

NEWARK, N. J.—The Linden Tanning Co. contemplates the erection of a $5000 tank house.

JERSEY CITY, N. J.—The White Marine Locator, Inc., has been incorporated with $5000 to manufacture sound locator instruments. Adolph Danbeck, West Orange, N. J., is a director.

NEWARK, N. J.—The Oxweld Acetylene Co., 640 Frelinghuysen avenue, contemplates the erection of a factory, three stories, 42 x 100 feet, to cost $49,800.

NEWARK, N. J.—The Essex Foundry Co. plans the erection of a 2-story foundry building. Ballinger & Perrot are the architects.

NEWARK, N. J.—Baker & Co., Inc., Railroad avenue, contemplates the erection of an engine room, 34 x 36 feet, at a cost of $3400.

NEWARK, N. J.—The Newark Brush Scraper Co. has awarded a contract to the Beaver Construction Co. for the erection of an addition.

BALTIMORE.—The Baltimore Car & Foundry Co. has awarded contracts for the construction of an $8000 transformer house.

BALTIMORE.—Bartlett Hayward Co. will erect a $15,000 boiler house addition.

HAGERSTOWN, MD.—The Western Maryland Railroad Co. plans the construction of a railroad shop here.

HIGHLANDTOWN, MD.—The Crown Cork & Seal Co. is erecting a plant here for the manufacture of ammunition. It is estimated the plant will cost about $30,000.

INDIAN HEAD, MD.—The general contract for a $180,000 nitrating plant has been awarded to the DeKimpe Construction Co., Union Hill, N. J., by the navy department.

Central States Activities

ANTIGO, WIS.—The Murray-Myirea Machine Co. is building a boiler house and installing a steam heating system in its foundry and machine shop, formerly the plant of the International Hoist Co., Pioneer Iron Works, and Mayer Bros., Inc.

BARTON, WIS.—The Woodford Engineering Co. has awarded a contract to Johnson & Drake, Minneapolis, Minn., for erection of a 2-story brick and concrete addition, 40 x 120 feet, to its electric conveyor and hoist works.

BELOIT, WIS.—The Beloit Iron Works is building a core room and boiler shop addition of brick and reinforced concrete, to cost $20,000.

GREEN BAY, WIS.—About 800 feet of 6 and 8-inch water mains and seven new hydrants will be installed by the Green Bay Water Co. at the shipbuilding plant of the Northwest Engineering Works.

MADISON, WIS.—The Wisconsin highway commission has awarded a contract to J. F. Icke, Madison, for a $4000 steel and reinforced concrete bridge in Burke, Dane county.

MILWAUKEE—The Industrial Controller Co., 866 Greenbush street, will build a 1-story brick and mill shop addition, 30 x 65 feet.

MILWAUKEE—Reconstruction of its plant, badly damaged by fire on Oct. 18, has been undertaken by the Modern Steel Treating Co., 610 Thirty-eighth avenue. The new building will be 35 x 90 feet.

MILWAUKEE—The Cream City Mfg. Co., capitalized at $100,000, has been chartered to manufacture machinery and engines by Joseph Barels and B. H. Helming, Jr., 703 Merrill building.

MILWAUKEE—The Northern Conveyor & Mfg. Co., capitalized at $5,000, has been chartered to manufacture conveying systems by J. M. Clarke, J. P. Donnelly and H. C. Carter.

MILWAUKEE—The Galland-Henning Mfg. Co., 1103 Railway Exchange building, has deferred until spring the proposed new machine shop addition, 60 x 150 feet.

MILWAUKEE—Architects E. Brielmaier & Sons, 432 Broadway, have awarded the general contract for the construction of a $175,000 hospital at Muskegon, Mich., to John McNabb & Sons, Grand Rapids, Wis.

MILWAUKEE—The Allis-Chalmers Mfg. Co. is erecting a pattern storage warehouse in West Allis, to be 100 x 320 feet, four stories, of brick and mill construction. Klug & Smith, consulting engineerd, 39 Mack block, Milwaukee, have the contract.

NEENAH, WIS.—The Neenah Brass Works will make improvements and extensions costing $25,000 under direction of Childs & Smith, 122 South Michigan avenue, Chicago. The main work is a factory and office addition, two stories, of brick and concrete.

OCONOMOWOC, WIS.—Ray Welch will rebuild his public garage and automobile service station, badly damaged by fire with a loss of $12,000.

OSHKOSH, WIS.—The Oshkosh Mfg. Co. has awarded the following contracts for erection of a 2-story brick and steel addition to its machine tool and mechanical appliance works: Structural steel, Vulcan Iron Works, Fond du Lac, Wis.; reinforcing bars, P. J. Kalman Co., Milwaukee; sheet metal, Waring Sheet Metal Co., Oshkosh. The building will be 40 x 120 feet.

SHEBOYGAN FALLS, WIS.—Capt. Ernest W. Gonzenbach, Sheboygan, Wis., formerly manager of the Sheboygan Railway & Light Co., has acquired the Falls Roller Mills and water power and will make improvements to enlarge milling capacity and output of current for commercial light and power purposes.

SUPERIOR, WIS.—The Chicago, St. Paul, Minneapolis & Omaha railroad has awarded a contract to the Peppard & Fulton Co., to rebuild a 15-stall section of its roundhouse and shops. The section was damaged by fire.

WAUWAUTOSA, WIS.—The Northwestern Chemical Co., Sixty-first and State streets, will rebuild its burned chemical plant, one-story, 48 x 147 feet.

WAUWATOSA, WIS.—C. A. Kleppe, 1026 First street, Milwaukee, has the general contract for erecting a new plant for the Northwestern Chemical Co., costing about $25,000. Architects C. F. Ringer & Son, Milwaukee, prepared plans for the new factory, which will be 50 x 150 feet, 1-story, of brick and concrete.

BAY CITY, MICH.—The Bay City Foundry & Machine Co. is building a 1-story foundry, 110 x 200 feet, to cost $50,000.

DEARBORN, MICH.—The Ford Motor Co. contemplates the erection of an addition to its tractor plant here at an estimated cost of $1,000,000.

DETROIT.—The Wilson Foundry & Machine Co. is building a 1-story, 100 x 400-foot factory here.

DETROIT.—The American Car & Foundry Co. is erecting a 2-story factory building here at a cost of $20,000.

DETROIT.—The Hinckley Motor Co. has awarded a contract for the erection of a 1-story, 32 x 90-foot addition to its plant.

DETROIT, MICH.—The Aluminum Castings Co., 1576 Joseph Campau avenue, will build a 1-story foundry addition, 340 x 640 feet.

DETROIT—The Michigan Smelting & Refining Co., Joseph Sillman president, is building a power house, 44 x 48 feet, to cost $10,000.

GRAND RAPIDS, MICH.—The Grand Rapids Brass Co. contemplates the erection of a 3-story addition to its plant.

LANSING, MICH.—The Olds Motor Works contemplates the erection of additions to its plant, and plans to install new tools and machinery.

CHICAGO—The Sasgen Derrick Co., M. J. Sasgen president, 3101 Grand avenue, is building an addition, 57 x 90 feet, to cost $12,000.

CHICAGO—The Liberty Car Co., capitalized at $100,000, has been chartered to manufacture motor cars by Elmer E. Lamper, Herman H. Soren, and Arthur R. Maloney.

CHICAGO—The Standard Washing Machine Co., capitalized at $50,000, has been chartered in Delaware to manufacture machinery and washing devices by F. T. Muncie, A. R. Goddard and W. V. Rifle.

DECATUR, ILL.—The H. Mueller Mfg. Co. will build a 1-story factory, 117 x 165 feet.

PEORIA, ILL.—The Holt Mfg. Co., manufacturer of tractors and tanks, is in the market for equipment.

HAMMOND, IND.—Fire recently damaged the plant of the Standard Steel Car Co. with a loss of $50,000.

INDIANAPOLIS, IND.—The Auto Body & Equipment Corp., capitalized at $25,000, has been chartered to manufacture automobile parts by James L. Nimal, Alvah S. Kuhl and Daniel C. Bradley.

ADDYSTON, O.—The United States Cast Iron & Foundry Co. has had plans prepared for the erection of a 3-story machine shop.

AKRON, O.—T. C. Edwards, 71 Rosalind court, has awarded a contract for the erection of a 1-story, 40 x 85-foot factory.

CANTON, O.—The Canton Steel Foundry Co. may enlarge its plant.

CARTHAGE, O.—The Standard Parts Co., Cleveland, contemplates the erection of a 1-story factory here.

CLEVELAND—The Globe Stamping & Machine Co. has let a contract to the Craig-Curtiss Co., Guardian building, for erection of an addition, to cost $125,000.

CLEVELAND.—The Harris Printing & Engraving Co. recently purchased a site, 50 x 170 feet, on which it plans the erection of a new plant.

CLEVELAND—Preliminary plans have been drawn for a power house and office building for the Aluminum Castings Co.

CLEVELAND—The capital issues committee has approved a $330,000 bond issue by the city for enlarging the municipal lighting plant.

CLEVELAND—S. W. Whitmore, president of the Whitmore Mfg. Co., recently purchased a site on Lorain avenue, and is said to contemplate erection of a plant.

CLEVELAND—The Ohio Metal Briquetting Co., 909 Schofield building, is expected to ask bids soon for erection of a fatcory building. Preliminary plans for the building, to cost $75,000, have been drawn.

CLEVELAND.—The George A. Rutherford Co. has

Do These 902 New Foundries Know You and Your Products?

Nearly 1,000 new foundries have started recently. They need new equipment—your products—and the quickest and least expensive way to get in touch with them is by using the 1918-1919 edition of "Penton's Foundry List".

This new edition of the only foundry directory published, is corrected and revised right down to the last minute. It contains the names and addresses of every foundry in the United States and Canada and tells the kind of castings made by each—gray iron, malleable, steel, brass or aluminum. It also indicates whether a machine shop, a pattern shop, or both, are operated in connection with the foundry.

The book is divided into four sections, the first one listing ***all*** foundries; the second, brass and aluminum; the third, steel, and the fourth, malleable. To make the list still more convenient to use, each section is printed on paper of a different color from the other.

Mailing letters to a "hit or miss" list or paying war-time salaries for salesmen to lose time searching for concerns who have gone out of business, or moved, is a waste that should be stopped immediately.

By using "Penton's Foundry List" you eliminate all possible duplication of effort. If you wish to mail a letter to only one kind of foundry you do not waste time picking them out here and there—that has been done for you.

Send for your copy now while the list is new—and all the names and addresses correct. The sooner you begin using it the more money you will save.

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Penton Building **Cleveland, Ohio**

114

contracted for temporary quarters, pending the erection of a new building, 80 x 200 feet, on Prospect avenue, near East Eighteenth street.

CLEVELAND.—The Electrical Mfg. Co. recently purchased additional land, on which it is reported the company contemplates the erection of an addition to its plant.

CLEVELAND.—Ground has been broken for the erection of an addition to the plant of the Aluminum Castings Co. The buildings will be of brick and steel construction, and will cost approximately $500,000. One building will be 90 x 120 feet and will be utilized as a metal melting department; there will be a sand storage building 70 x 240 feet. The third addition will be a finishing and shipping building, 120 x 280 feet. When these structures are completed it will give the company a group of eleven buildings at its Harvard avenue plant. J. H. Chaney & Son, Hippodrome building, have the general contract for the work. J. Howard Williams of the company is in charge of construction.

DAYTON, O.—The Platt Iron Works contemplates the erection of a storehouse.

ELYRIA, O.—A. Arbar, architect, has drawn plans for the erection of an addition to a foundry on West River street, 2-stories, 40 x 100 feet.

ELYRIA, O.—Plans for erection of an addition, 100 x 300 feet, to the Garford Motor Truck Co. have been completed.

TOLEDO, O.—The Air Way Co. recently was incorporated here and contemplates the erection of a factory at the end of the war.

GREENUP, KY.—Citizens have started a campaign to raise funds to build a light plant to replace the one recently damaged by fire.

GRAHAM, W. VA.—J. P. Cameron has acquired a rolling mill and plans to remodel and convert same into a molding room to be operated in connection with his foundry.

KNOXVILLE, TENN.—The Day Pulverizer Co. has increased its capital stock and contemplates the erection of an addition to its plant.

LEXINGTON, TENN.—The Jones Mfg. Co., capitalized at $10,000, has been chartered to manufacture well equipment and supplies by H. E. Graper, J. F. Neisler and J. C. Benson.

TATUM, S. C.—Stewart & Co. plans to build a plant for the manufacture of cans.

WORTHINGTON, MINN.—Bids were received until Nov. 14 by W. H. Burchen, city clerk, for a power plant, including stoker equipment.

ST. LOUIS—The Inland Machine Co., 1500 North Broadway, is having plans prepared for a 2-story plant, 200 x 300 feet, to cost $150,000. O. G. Stark is president.

CLAREMONT, OKLA.—Bids were received until Nov. 16 by I. W. Slack, chairman of Rogers county commissioners, for a steel bridge over the Verdigris river.

GALENA, KANS.—Plans are being prepared by Burns & McDonnell, Kansas City, Mo., for a filtration plant to cost $100,000.

CLARKSON, NEBR.—The city will let a contract shortly to rebuild its power house at a cost of $26,000. Henningson Engineering Co., Omaha, is engineer.

GREAT FALLS, MONT.—The Great Northern Railway Co., will build shops at Great Falls at a cost of $250,000. A. H. Hogeland, St. Paul, Minn., is engineer.

NEWCASTLE, WYO.—A bond issue of $200,000 has been voted for the construction of a waterworks system.

Up and Down the Pacific Coast

NORTHPORT, WASH.—The Northport Smelting & Refining Co. contemplates the erection of a new plant to be erected at a cost of $50,000.

SEATTLE—The Brauer-Weisenborn Engine Co., capitalized at $1,000,000, has been chartered by A. Brauer, G. P. Weisenborn and J. H. Kugler.

SEATTLE—The C. J. Young Machine Works contemplates the erection of an addition to its machine shop, 60 x 120 feet, at 2951 First avenue.

SEATTLE—The substation of the Puget Sound Traction, Light & Power Co. was damaged by fire recently. It probably will be rebuilt.

SEATTLE—Sealed proposals will be received by the board of public works until Nov. 22 for erection of a steel water tank and supporting tower for the city water department.

SEATTLE—The Ames Shipbuilding Co., 3300 Twenty-sixth avenue, contemplates the construction of a 2-story frame addition, 80 x 100 feet, at a cost of $6000.

SEATTLE—Bids will be received until Nov. 22 by C. W. Bagley, secretary of the board of public works, 234 County-City building, for a steel water tank of 500,000 gallons capacity and a steel supported tower.

SPOKANE, WASH.—It is reported that the Washington Water Power Co. contemplates the expenditure of $3,000,000 on a new power plant.

TACOMA, WASH.—P. C. Walesby, 1883 Dock street, has been awarded a contract for the construction of a machine shop for the Colby Steel & Engineering Co.

BAKERSFIELD, CAL.—The Electric Annealing & Machine Co., captialized at $30,000, has been chartered by H. E. Eddington, Paul B. McCracken and W. W. Miller.

LOS ANGELES—The Ruhland Automobile Works, capitalized at $25,000, has been chartered to manufacture automobile parts by David E. Fullwider, T. F. Ruhland and T. E. Ruhland.

LOS ANGELES, CAL.—The Regan Forge & Engineering Co., capitalized at $150,000, will build a plant, 50 x 60 feet and 30 x 75 feet. Joseph J. Regan is manager.

New Business in Canada

ALERT BAY, B. C.—Cyrus McCormick is building a pulp plant.

LAKE BUNTZEN, B. C.—The American Nitrogen Products Co. has started work on the first building in connection with the erection of a plant at Lake Buntzen, Burrard Inlet.

POINT GREY, B. C.—The Eburne Sawmills, Ltd., is having plans prepared for a sawmill to replace the one recently damaged by fire. New machinery will be purchased

AMHERSTBURG, ONT.—The town council is asking for prices on new transformers and electrical equipment. Dr. Fred Park is mayor.

FORT WILLIAM, ONT.—The Canadian Car & Foundry Co., 1213 Laughton avenue, has decided to erect another building at its plant.

FORT WILLIAM, ONT.—The Plymouth Cordage Co., Plymouth, Mass., will build a 5-story concrete warehouse.

LONDON, ONT.—The General Motors Co. will build a motor truck factory at London, Ont.

OTTAWA, ONT.—The Beach Foundry Co. has started work on the erection of a foundry addition.

PARRY SOUND, ONT.—Mark Rogers is in the market for a 6-roller, 4-sided planer; also a 4-inch band resaw for planing mill,

SANDWICH, ONT.—The International Castings Co. has decided to build a foundry. Work will be started immediately.

TORONTO, ONT.—The Palmolive Co. of Canada, Ltd., 64 Natalie street, is building a factory addition.

TORONTO, ONT.—The U. S. & Canada Transport & Trading Co., Ltd., has been incorporated to build and operate ships, vessels, motors, machinery, equipment, etc., with $2,500,000 capital stock, by Joseph M. Bullen, Norman S. Robertson, Wendell Osborne and others, all of Toronto.

WINDSOR, ONT.—The Canadian Pacific Railway Co. proposes to make considerable extensions to its yards here.

LACHINE, QUE.—The Crane Co., 836 South Michigan street, Chicago, has awarded the contract for the erection of a $600,000 plant.

MONTREAL, QUE.—City commissioners are studying a project for the electrification of half of the waterworks pumping station.

MONTREAL, QUE.—The oil plant owned by the Beaver Oil Co., 900 De L'Espee street, was damaged by fire with a loss of $10,000. The company will rebuild.

MONTREAL, QUE.—The Pulp & Paper Mills Supply Co., Ltd., has been incorporated to manufacture pulp, paper, etc., with $150,000 capital stock; by Thomas J. Coulter, William S. Jones, Percival W. Peacock and others, of Montreal.

MONTREAL, QUE.—The Fraser, Brace Shipyards, Ltd., has been incorporated to build and operate docks, shipyards, vessels, boats, to manufacture machinery, equipment, engines, etc., with $750,000 capital stock, by D. Burley-Smith, Frank M. Jordan, Charles G. McCartney and others of Montreal.

WSM

STEEL PLANT EQUIPMENT
COKE OVEN MACHINERY
GAS PRODUCERS
ORE AND COAL HANDLING MACHINERY
SPECIAL CRANES
MINING MACHINERY
HYDRAULIC TURBINES

The Hughes Mechanical Gas Producer

REPEAT ORDERS
Indicate Satisfaction

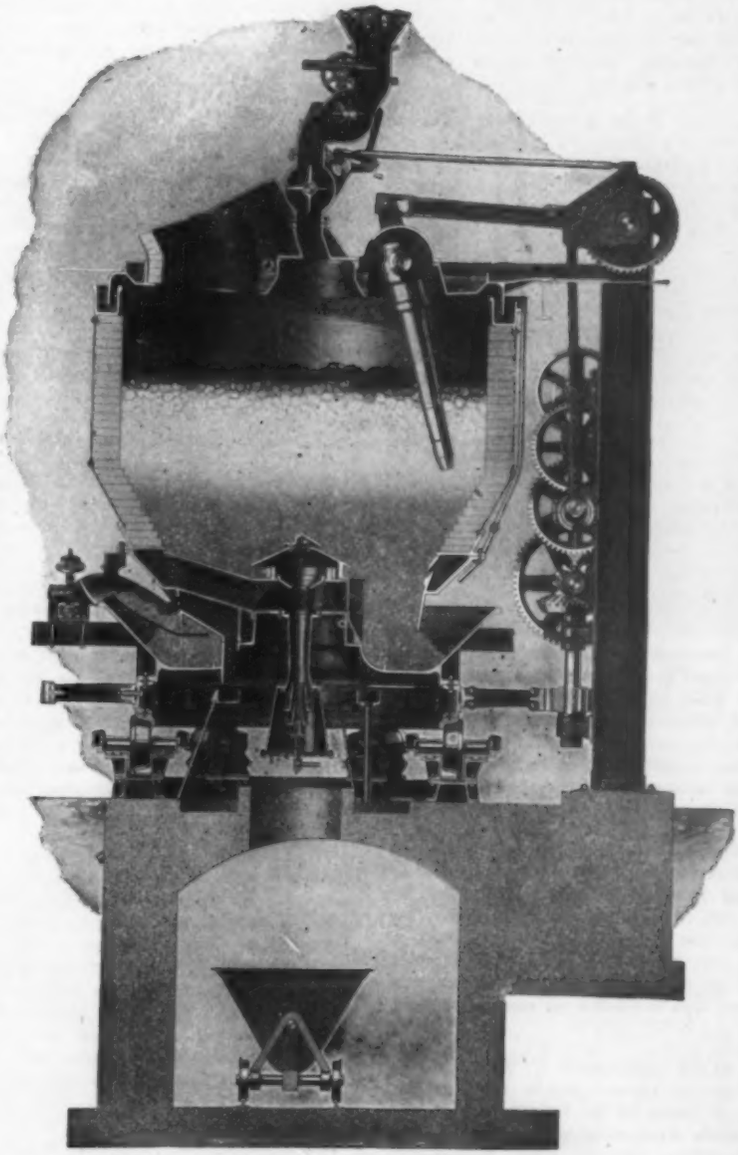
A partial list of repeat customers showing number of Hughes Producers used by each.

Carnegie Steel Co.	119
American Steel & Wire Co.	56
Bethlehem Steel Co.	54
New Jersey Zinc Co.	42
National Tube Co.	41
Jones & Laughlin Steel Co.	40
Lackawanna Steel Co.	39
Indiana Steel Co.	38
Inland Steel Co.	36
Minnesota Steel Co.	36
Pittsburgh Steel Co.	36
American Sheet & Tin Plate Co.	32
Republic Iron & Steel Co.	32
American Rolling Mill Co.	30
Corrigan, McKinney & Co.	30

More than 1000 in use

Write for Bulletin A-4

Bulletin A-4 contains considerable information on the subject of producer gas and explains the Hughes Uniform Feed, Water Cooled Poker, Blowing, Mixing and other special features which contribute to its splendid performance. A copy is waiting your request.



THE WELLMAN-SEAVER-MORGAN CO.

CLEVELAND, OHIO, U.S.A.

New Trade Publications

REFLECTORS—The National X-Ray Reflector Co., Chicago, recently published a catalog describing direct lighting reflectors put out by the company. The catalog covers the entire field of illumination for industrial, flood, show windows and show-case lighting.

MAGNETIC SEPARATOR—A bulletin issued by the J. W. Paxson Co., Philadelphia, is devoted to its line of belt-driven and hand-power magnetic separators, designed for separating ferrous from nonferrous metals. It is equipped with permanent magnets, no electric currents being required.

TOOL HOLDERS.—The Gisholt Machine Co., Madison, Wis., recently published a small folder in which tool holders for use in turret lathes and engine lathes equipped with turret or double strap tool post are described and illustrated. The folder contains a price list of the different sizes of holders.

VISES—A small 12-page booklet recently was published by the Ainslie Machine & Tool Works, Hartford, Conn., in which jigs, dies, tools, joints and handy vises are described and illustrated. The booklet contains a number of tables, showing the sizes and capacities of the joints, vises, etc.

WIRE GLASS.—The Hires Turner Glass Co., Philadelphia, is circulating a 20-page catalog in which glass interwoven with wire is described and illustrated. This glass, the company claims, can be used in all construction work, etc., and not only is an important factor in building economy, but is a fire retardant as well as a safeguard to human life.

OXYGEN AND HYDROGEN GENERATORS—The improved electrolytic oxyhydrogen generator built by the International Oxygen Co., 115 Broadway, New York, is illustrated and described in a 24-page catalog recently issued. It contains dimensions and capacities and working plans of two typical plant lay-outs of common capacity, showing the extreme compactness of this new cell.

HOISTING MACHINERY.—A large 56-page catalog, containing illustrations and full descriptions of crabs, cranes, jib cranes, overhead hand-traveling cranes, portable floor cranes, transfer cranes, current collectors, hoists, both hand and electric, switches, trolleys, turntables and other hoisting machinery, is being circulated by the Brown Hoisting Machinery Co., Cleveland. The booklet also contains several illustrations showing the cranes and other hoisting machinery in operation.

FURNACES.—An attractive 16-page booklet in which heat-treating furnaces of large capacity are described and illustrated, is being circulated to the trade by Tate-Jones & Co., Inc., Pittsburgh. The illustrations show Tate-Jones furnace installations in practically every part of the country, many of which, it is said, are doing good service despite several years use. Several types of furnaces are among the illustrations.

SAND BLAST EQUIPMENT—A 24-page catalog published by the American Foundry Equipment Co., Cleveland, is devoted to the extensive line of sand blast machinery manufactured by this company. Numerous installation views are shown, together with plans of various layouts. Special sand blast rooms for cleaning large castings mounted on trucks also are shown, as well as automatic sand blast tumbling barrels, rotary table cabinet, rotary table sand blast rooms, etc.

HYDRAULIC TURBINES.—An attractive 16-page catalog is being circulated by the Trump Mfg. Co., Springfield, O., in which hydraulic turbines of all kinds, sizes, etc., are fully described and illustrated. which can be mounted above and directly connected to the vertical turbine shaft. A vertical turbine in a steel flume is also described. The booklet contains Among those described are turbines developed for low and medium heads and for moderate speed; those adapted to the driving of vertical generators and 12 diagrams showing the different ways of installing hydraulic turbines.

FOUNDRY EQUIPMENT—The extensive line of pressed steel flasks, steel slip in jackets, steel flask bands, steel bottom boards, core plates, strike plates, loading skips, ladle handles and tote pans, manufactured by the Peck Iron & Steel Works, Kalamazoo, Mich., is illustrated and described in a catalog recently issued by this company. Foundries generally are discarding wooden flasks, slip jackets, etc., and are replacing this equipment with that constructed of steel.

SHELL TOOLS.—The Wetmore Mechanical Laboratory Co., Milwaukee, recently issued to the trade a 3-page leaflet in which thread-milling hobs, taps and expanding reamers for shell and munition manufacture were described and illustrated. The hobs are made in sizes for use on various standard thread-milling machines used in shell production. The taps described are made either solid or expanding, both types of which are illustrated. The reamers are for finish sizing of the fuse holes of shells.

DRILLS—A four-page bulletin is being distributed by the Cleveland Punch & Shear Works Co., Cleveland, in which wall radial drills are described and illustrated. The drills are adapted for steel fabricating shop use and are valuable assistants to structural iron workers, bridge builders, ship builders, etc. The drills are built to drill a 1½-inch hole in cast iron or soft steel, and has a wide range. The horizontal arm can be swung by hand. The drills are equipped with a raising and lowering device.

GAS PRODUCER AGITATORS.—The Chapman Engineering Co., Mt. Vernon, O., recently issued a bulletin in which a floating agitator with automatic feed for gas producers is described and illustrated. The agitator oscillates up and down with the fire bed, adapting itself automatically to the varying height of the fire. A special tooth roller is provided in the coal hopper to prevent the hanging up of fuel. It also serves as an auxiliary coal crusher. Results obtained in various steel plants throughout the country are also given in the bulletin.

ATTACHING DEVICES.—A small 4-page folder in which 21 of the various electrical attaching devices manufactured by the Cutler-Hammer Mfg. Co., Milwaukee, is described and illustrated, is being circulated. They include numerous types of flush, surface, conduit and metal mounting receptacles besides motor attachment plugs, cord connectors and current taps. These devices have a rating of 10 amperes, 250 volts, with the exception of the attachment plug and current taps, which have the maximum screw shell or socket rating of 660 watts. The folder lists the complete line of devices.

AUTOMATIC LATHES—The Jones & Lamson Machine Co., Springfield, Vt., has issued an 86-page, illustrated book describing its automatic lathe. These lathes are designed to take bar stock or work held on arbors or centers. All the tool movements are controlled by means of cams. Thus, after once the machine is set up, finished pieces that are alike are assured, provided the operator exercises due care to gage the work occasionally to check errors due to the cutting tools wearing slightly. The book is well illustrated and shows several interesting turning operations. A number of drawings are also included which graphically illustrate set-ups for a number of operations. The machine handles a variety of work that is usually done on the engine lathe. In this category are included pulleys, gear blanks, flanges, hubs, and other pieces used in the manufacture of automobiles, textile machinery, etc. The book is of interest to the superintendent, the tool designer and the operator.

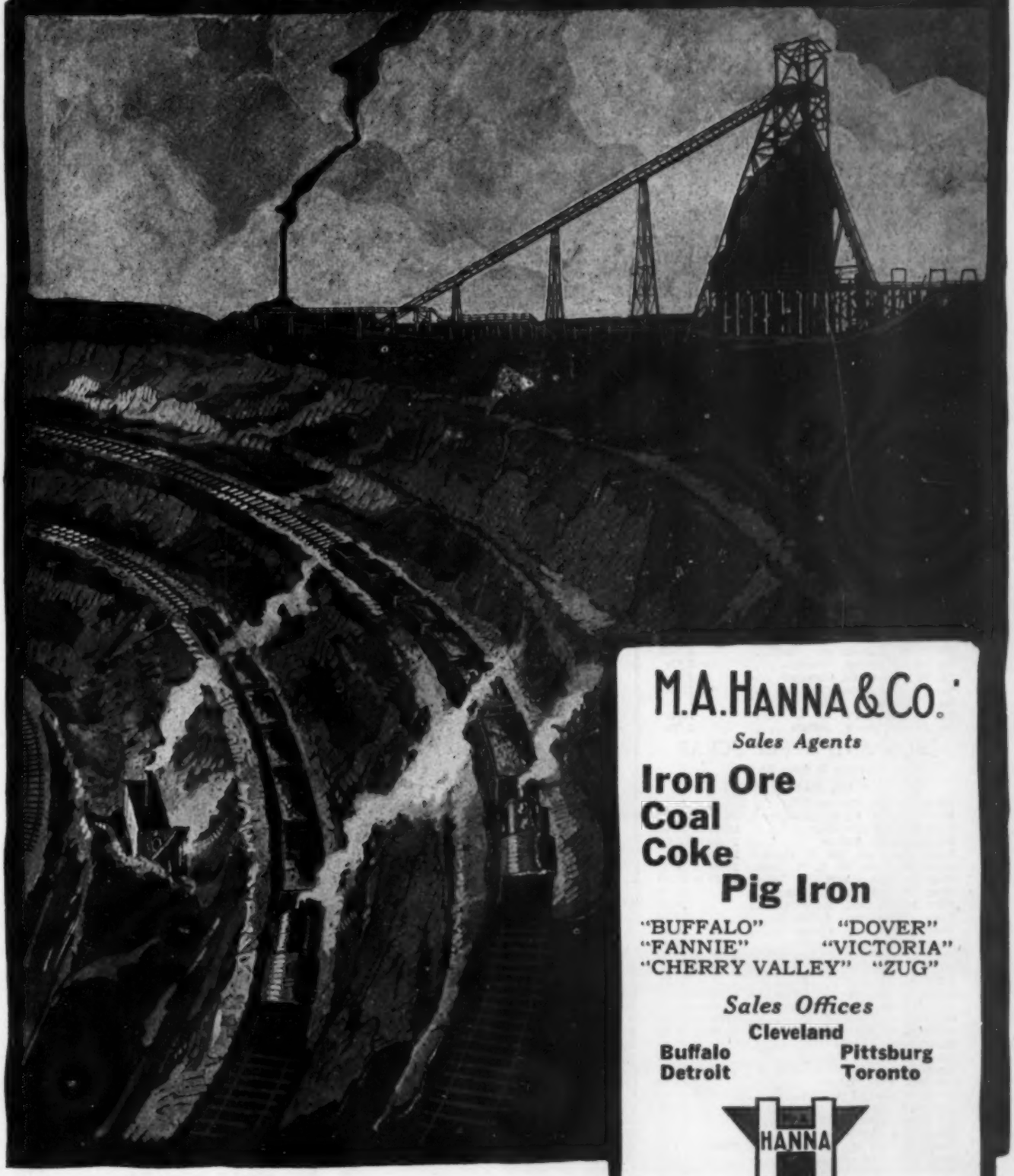
CIRCULATING PUMPS—The Fulflo Pump Co., Blanchester, O., recently issued a circular describing its circulating pump which is used in connection with machine tools, grinders, etc., for supplying cutting and cooling compounds. It is pointed out that the construction of the pump is such that it is impossible for it to lose its prime and that chips can be run through it without injury to the working parts. The pump works on the centrifugal principle and may be mounted either above or below the level of the liquid to be delivered. The only working part of the pump is the impeller which is mounted directly on the drive shaft. The circular describes the pump fully and contains several illustrations showing its mechanical details.

WEIGHING APPARATUS—The Schaffer Engineering & Equipment Co., Tiffin, O., has issued a booklet describing its machine for weighing out and proportioning liquids and solids. The machine is adapted to handle such materials as coal, coke, ground quick lime, limestone, ores of various kinds, sawdust, ground shales, fire clays, manganese, hydrated lime, oxide of zinc, litharge, white lead, iron ore and similar materials. The machine consists of a frame carrying a conveyor belt to which the material is fed by a hopper. An automatic weighing device determines the exact amount of material delivered which can be adjusted to suit conditions. A liquid measure attachment is provided, the object of which is to proportion liquids and solids. The booklet is illustrated and describes the device fully.

SAFETY GOGGLES—A well illustrated 24-page catalog, entitled "Same Your Workmen's Eyes," has been issued by the Julius King Optical Co., New York. A large assortment of goggles adapted to practically all industrial operations where the eyes are in danger is shown. In the construction of these goggles, the lenses receive special attention and all goggles manufactured are provided with surface-ground lenses which are clear, bright and of great transparency. Furthermore, it is claimed that these lenses will not splinter when broken. Among the goggles shown are those equipped with different types of side frames, particularly recommended for workers engaged in chipping or chiseling in metal and breaking or drilling brick or stone. Various types of welders goggles are illustrated as well as respirators, welders helmets, face masks, babbitting masks, etc.

LEATHER BELTING—The Graton & Knight Mfg. Co., Worcester, Mass., has just issued a booklet devoted to standardized leather belting. It is pointed out that it is exceedingly difficult to standardize belting owing to the fact that different consumers have heretofore insisted on standards of their own. The booklet contains much interesting information about leather belts and includes several tables and standards for belts that the company has worked out from many years of practical experimentation. Among the standards are belts for textile mills, steel mills, machine shops, planing mills, woodworking shops, saw mills, oil mills, paper mills, flour mills, cotton gins, cement mills. General belt standards also are shown in each case, a list is given of the different belts used in the various industries and the kind of belt the company recommends. Mechanical rules regarding belts and the horsepower of belts are also included.

HANNA



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HANNA

Iron and Steel Prices

Corrected to Tuesday Noon

IRON ORE

Superior Ores, Per Ton, Lower Lake Ports	
Old range Bessemer, 55 iron	$6.65
Mesabi Bessemer, 55 iron	6.40
Old range non-Bess., 51½ iron	5.90
Mesabi non-Bess., 51½ iron	5.75

WAREHOUSE PRICES

Steel bars, Chicago	4.17c
Steel bars, Cleveland	4.07c
Steel bars, Detroit	4.13c
Steel bars, Philadelphia	4.145c
Steel bars, New York	4.17c
Steel bars, St. Louis	4.24c
Steel bars, Cincinnati	4.13c
Steel bars, St. Paul	4.395c
Steel bars, Buffalo	4.10c
Iron bars, Buffalo	4.70c
Iron bars, Chicago	4.77c
Iron bars, Cleveland	4.67c
Iron bars, Detroit	4.75c
Iron bars, St. Louis	4.84c
Iron bars, Cincinnati	4.13c
Iron bars, Philadelphia	4.745c
Iron bars, News York	4.77c
Shapes, Chicago	4.27c
Shapes, Detroit	4.23c
Shapes, St. Louis	4.34c
Shapes, St. Paul	4.495c
Shapes, New York	4.27c
Shapes, Cleveland	4.17c
Shapes, Philadelphia	4.245c
Shapes, Buffalo	4.20c
Shapes, Cincinnati	4.23c
Plates, Buffalo	4.45c
Plates, Chicago	4.52c
Plates, Detroit	4.48c
Plates, St. Louis	4.59c
Plates, St. Paul	4.745c
Plates, New York	4.52c
Plates, Cleveland	4.42c
Plates, Philadelphia	4.495c
Plates, Cincinnati	4.48c
No. 10 blue anl. sheets, Chicago	5.52c
No. 10 blue anl. sheets, Cleveland	5.42c
No. 10 blue anl., Buffalo	5.45c
No. 10 blue anl. sheets, St. L.	5.59c
No. 10 blue anl. sheets, Cincinnati	5.48c
No. 10 blue anl. sheets, St. Paul	5.745c
No. 10 blue anl. sheets, Detroit	5.48c
No. 28 black sheets, Chicago	6.52c
No. 28 black sheets, Cleveland	6.42c
No. 28 black sheets, Cincinnati	6.48c
No. 28 black, Detroit	6.48c
No. 28 black sheets, St. L.	6.59c
No. 28 black sheets, St. Paul	6.745c
No. 28 galv. sheets, Chicago	7.77c
No. 28 galv. sheets, Cleveland	7.67c
No. 28 galv. sheets, Cincinnati	7.73c
No. 28 galvanized, Detroit	7.73c
No. 28 galv. sheets, St. L.	7.84c
No. 28 galv. sheets, Buffalo	7.70c

IRON AND STEEL SCRAP

(Prices in Gross Tons)

STEEL WORKS USE

Bundled sheets, Cincinnati	$26.00 to 26.50
Bundled sheets, Pittsburgh	28.00 to 29.00
Bundled sheets, Cleveland	26.00 to 27.00
Bundled sheets, Buffalo	25.00 to 26.00
Boiler plate, cut, No. 1, Chicago	28.00 to 28.50
Boiler plate, cut, No. 1, St. Louis	26.50 to 27.00
Frogs, switches, guards, St. Louis	28.50 to 29.00
Frogs, switches, guards, Chicago	29.00
Heavy melting steel, Pittsburgh	29.00
Heavy melting steel, Buffalo	30.00
Heavy melting steel, Chicago	29.00
Heavy melting steel, Cleveland	29.00
Heavy melting steel, Cincinnati	28.50 to 29.00
Heavy melting steel, east. Pa.	28.00 to 29.00
Heavy melting steel, N. Y.	26.00
Heavy melting steel, St. L.	28.50 to 29.00
Heavy melting steel, Birmingham	24.00 to 25.00
Baled sheets, Cleveland	28.50 to 29.00
Baled sheets, Pittsburgh	28.00 to 29.00
Baled sheets, Chicago	29.00
Knuckles, couplers, Chicago	34.00
Knuckles, couplers, St. Louis	33.00 to 33.50
Low phos. steel, Buffalo	37.50
Low phos. steel, Pittsburgh	38.50 to 39.00
Low phos. crops, eastern Pa.	39.00
Low phos. guaranteed E. Pa.	36.50
Shoveling steel, Chicago	29.00
Shoveling steel, St. Louis	28.00 to 28.50
Steel rails, short, Chicago	34.00
Steel rails, short, Cleveland	34.00
Steel rails, short, St. Louis	32.50 to 33.00
Steel rails, old, Birmingham	27.00 to 28.00
Stove plate, Chicago	28.00 to 29.00
Stove plate, Cincinnati	24.00 to 24.50
Stove plate, St. Louis	25.50 to 26.00
Stove plate, N. J. points	27.25
Stove plate, Birmingham	20.00 to 22.00
Stove plate, Buffalo	28.50 to 29.00
Stove plate, eastern Pa.	29.00
Stove plate, Cleveland	25.00 to 25.50
Stove plate, Pittsburgh	29.00

Freight Rates, Pig Iron

Mahoning and Shenango valleys to:	
Cleveland	$1.40
Newark, N. J.	4.40
Boston	4.60
Philadelphia	4.10
Pittsburgh	1.40
St. Louis	4.60
Minneapolis, St. Paul	5.70
Buffalo to:	
Albany, N. Y.	$1.75
New England (rail)	3.90
New York and Brooklyn (rail)	3.90
Virginia furnaces to:	
Philadelphia	$4.10
New England	4.70
Brooklyn, Jersey City, Newark	4.40
Birmingham, Ala., to:	
Boston	$8.00
Cincinnati	3.60
Chicago	5.00
Cleveland	5.00
Louisville, Ky.	3.30
Minneapolis, St. Paul	7.30
New York	7.70
Philadelphia	6.50
Pittsburgh	6.10
Savannah, Ga.	3.40
St. Louis	4.25
Chicago to:	
Des Moines	$3.50
Minneapolis, St. Paul	2.50
Milwaukee	.60
Moline, Ill.	1.40
Omaha	4.50
St. Louis	1.90
Ironton and Jackson, O., to:	
Chicago	$3.75
Cincinnati	1.75
Cleveland	2.40
Detroit	2.60
Indianapolis	2.30
Minneapolis, St. Paul	5.70

Freight Rates, Finished Material

Pittsburgh, carloads, per 100 lbs., to:	
New York	27.0 cents
Philadelphia	24.5 cents
Boston	30.0 cents
Buffalo	21.5 cents
Baltimore	23.0 cents
Cleveland	17.0 cents
Cincinnati	23.0 cents
Chicago	27.0 cents
Detroit	23.0 cents
Minneapolis and St. Paul	49.5 cents
Denver	$1.09
St. Louis	33.5 cents
New Orleans	38.5 cents
Birmingham	57.5 cents
Pacific coast (all rail)	$1.25
Pacific coast (tin plate)	1.25

IRON MILL USE

Busheling, No. 1, Cleveland	30.00 to 31.00
Busheling, No. 1, Buffalo	29.00 to 30.00
Busheling, No. 1, Pittsburgh	30.00 to 30.50
Busheling, No. 1, Cincinnati	27.00 to 27.50
Busheling, No. 1, Chicago	30.00 to 30.50
Busheling, No. 2 Chgo.	21.50 to 22.50
Busheling, No. 1, St. Louis	29.00 to 29.50
Cast borings, New York	16.75 to 16.90
Cast borings, eastern Pa.	19.00
Cast borings, Buffalo	18.00 to 19.00
Cast borings, Cleveland	18.50 to 19.00
Cast borings, Cincinnati	17.00 to 18.00
Cast borings, Pittsburgh	19.00
Cast borings, Birmingham	17.00 to 19.00
Cast borings, Chicago	18.00 to 19.00
Cast borings, St. Louis	18.50 to 19.00
City wrought, long, N. Y.	30.00
Cut forge, Chicago	32.00 to 32.50
Forge No. 1, eastern Pa.	28.00 to 29.00
Grate bars, Buffalo	27.50 to 28.00
Grate bars, Cleveland	25.50 to 26.00
Grate bars, N. J. points	27.25
Iron axles, Pittsburgh	46.50
Iron axles, Cincinnati	43.50 to 44.00
Iron axles, Cleveland	46.50
Iron axles, Chicago	46.50
Iron axles, eastern Pa.	46.50
Iron axles, St. Louis	46.00 to 46.50
Iron axles, Buffalo	45.00 to 47.00
Iron rails, Chicago	39.00
Iron rails, Buffalo	36.00 to 37.00
Iron rails, Cincinnati	34.50 to 35.00
Iron rails, St. Louis	38.50 to 39.00
Iron rails, Cleveland	37.00 to 38.00
Machine turnings, Cincinnati	18.00 to 18.50
Machine turnings, Cleveland	18.50 to 19.00
Machine turnings, Buffalo	18.00 to 18.50
Machine turnings, N. Y.	16.75 to 16.90
Machine turnings, Pittsburgh	18.00 to 19.00
Machine turnings, east. Pa.	19.00
Machine turnings, Birmingham	16.00 to 17.50
Machine turnings, Chicago	18.00 to 19.00
Machine shop turnings, St. Louis	18.50 to 19.00
Pipes and flues, Cleveland	28.00 to 29.00
Pipes and flues, Chicago	28.50 to 29.00
Pipes and flues, St. Louis	27.50 to 28.00
R. R. mach. cast, No. 1, Buffalo	34.00
R. R. wrgt. No. 1, Buffalo	34.00
R. R. wrgt. No. 1, east Pa.	34.00
Railroad wrgt. No. 1, Cincinnati	33.50 to 34.00
Railroad wrgh., No. 1, Cleveland	33.50 to 34.00
R. R. wrought, No. 1, Pittsburgh	34.00
Railroad wrgt., No. 2, Chicago	32.00 to 32.50
Railroad wrought, No. 1, Chicago	33.50 to 34.00
R. R. wrought, No. 1, Birmingham	25.00 to 26.00
No. 1 yard wrought, Eastern Pa.	33.00
No. 1 bushelings wrgt., East. Pa.	31.00
Sheet wrought, Pittsburgh	34.00
Railroad wrgt., No. 1, St. Louis	33.00 to 33.50
Railroad wrought, No. 2	32.00 to 32.50
Wrought pipe, Buffalo	27.00 to 28.00
Wrought pipe, East. Pa.	33.00
Wrought pipe, ungraded, East. Pa.	29.00

IRON OR STEEL WORKS USE

Axle turnings, Cleveland	$24.00
Axle turnings, Buffalo	24.00
Heavy axle turnings, East. Pa.	24.00
Heaxy axle turnings, Pitts.	24.00
Shafting, New York	35.50
Shafting, East. Pa.	39.00
Steel car axles, Birmingham	38.00 to 40.00
Steel car axles, Pittsburgh	46.50
Steel car axles, New York	43.00
Steel car axles, Buffalo	44.00 to 46.00
Steel car axles, Cleveland	44.00
Steel car axles, East. Pa.	46.50
Steel car axles, Chicago	46.50
Shafting, St. Louis	38.00 to 39.00
Steel car axles, St. Louis	46.00 to 46.50

IRON FOUNDRY USE

Car wheels (iron), Pittsburgh	$39.00
Car wheels (steel), Pittsburgh	34.00 to 35.00
Car wheels, East. Pa.	29.00
Car wheels, Buffalo	29.00
Car wheels, Chicago	29.00
Car wheels, St. Louis	28.50 to 29.00
Car wheels, Birmingham	25.00 to 26.00
Car wheels, Cleveland	30.00
Tram car wheels, Birmingham	24.00 to 25.00
Cast, No. 1, Birmingham	25.00 to 26.00
Cast No. 1, cupola, East. Pa.	34.00
Cast, No. 1, Cleveland	32.50 to 33.50
Cast, No. 1, Cincinnati	33.00 to 34.00
Cast, 1, heavy, New York	32.25 to 32.50
Cast, 1, machy., New York	32.25 to 32.50
Cast, No. 1, Chicago	33.00 to 34.00
Cast, No. 1, Pittsburgh	32.50 to 33.00
Cast, No. 1, St. Louis	32.00 to 32.50
Malleable, Cincinnati	30.00 to 34.00
Malleable, Cleveland	33.00 to 33.50
Malleable, Buffalo	29.00 to 34.00
Malleable, Pittsburgh	33.00 to 34.00
Malleable, East. Pa.	29.00
Malleable, cupola, East. Pa.	33.00
Malleable, railroad, Chicago	33.00 to 34.00
Malleable, agricultural, Chicago	33.00 to 33.25
Malleable, railroad, St. Louis	28.00 to 28.50
Malleable, agricultural, St. Louis	29.50 to 30.00

MISCELLANEOUS USES

Boiler punchings, Chicago	36.00 to 36.50
Reroll. rails, 5 ft. and over, Pitts.	34.00
Reroll. rails, 5 ft. and over, Chi.	34.00
Reroll. rails, 5 ft. and over, E. Pa.	34.00
Reroll. rails, 5 ft. and over, St. L.	33.50 to 34.00
Reroll. rails, 5 ft. or over, Cleve.	34.00
Rerolling rails, long, Birmingham	37.50 to 38.50
Locomotive tires, Chicago	45.50 to 46.50
Locomotive tires, St. Louis	42.50 to 43.00